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The Maine Teacher Resilience Study: Using SEM to Create A Teacher Costs to Caring Resilience Model

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THE MAINE TEACHER RESILIENCE STUDY: USING SEM TO CREATE A TEACHER COSTS TO CARING RESILIENCE MODEL

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An Abstract of the Dissertation Presented
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For decades, researchers have understood the deleterious emotional and psychological effects that can result from working with individuals who have experienced trauma and adverse childhood experiences (ACEs) including vicarious traumatization, compassion fatigue, secondary traumatic stress (STS), burnout, and an intent to leave the profession (Figley, 1995; McCann & Pearlman, 1990; Stamm, 1999). Figley (1995) deemed such effects as an almost inevitable "cost to caring" (p.1) for those who have experienced adversity. Teachers, however, have been largely left out of the discussion surrounding such effects. The purpose of this quantitative study is two-fold. First, the purpose is to understand the extent to which Maine teachers experience costs to caring defined in this study as STS, burnout, and a desire to leave the profession. The second purpose is to test a conceptual Teacher Costs to Caring Resilience Model (TCCRM) using structural equation modeling (SEM). The purpose of the TCCRM is to aid in the understanding of risk and protective factors that contribute to teachers' costs to caring. The TCCRM is theoretically based on the Compassion Fatigue Resilience Model (Ludick & Figley, 2017).

The sample for this study consisted of 542 K-12 Maine teachers who were members of the Maine Education Association, the state-level chapter of the National Education Association. Data was collected online using The Maine Teacher Resilience Survey during February and March of 2020. Findings suggest that personal resilience and compassion satisfaction have a strong negative direct effect on costs to caring. Further, working in a positive school climate showed a strong negative indirect effect on costs to caring. Additionally, teachers who have personally experienced ACEs may be at a slightly higher risk of experiencing costs of caring than those who have not. Using a systems-based approach at school, district, and state levels based on a final TCCRM to mitigate risks associated with teacher cost to caring is suggested.

DEDICATION

To my family. Those who are with me and those who are not. You have all supported and influenced me in ways you will never know. I love you all.

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Any journey, especially one of this magnitude, cannot be done alone. It is with sincerest gratitude that I acknowledge those who have helped me along this path.

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CHAPTER ONE

INTRODUCTION

For almost 50 years, researchers have recognized the deleterious emotional effects that can result from working with those who have experienced trauma and adversity (McCann & Pearlman, 1990, pp. 134-136). One major effect is compassion fatigue defined as the exhaustion resulting from caring for others (Figley, 1995). Compassion fatigue can be seen as consisting of two primary elements: secondary traumatic stress (STS), which includes physical and emotional symptoms similar to those of post-traumatic stress disorder (PTSD) and burnout which includes feelings of exhaustion, cynicism, and inefficacy at work (Maslach et al., 2001; Stamm, 1999, 2010). Cerney (1995) suggested that burnout may cause therapists to become disgusted by their patients. In education, teacher burnout has been shown to be a strong predictor of teachers' desire to change professions (Skaalvik & Skaalvik, 2017; Tsouloupas et al., 2010). Figley (1995) recognized effects such as compassion fatigue and the desire to leave a profession as "a cost to caring" (p.1). Pearlman and Saakvitne (1995) suggested costs to caring are the natural, perhaps even inevitable, result of empathic practitioners working with those who have experienced trauma and adversity.

Before understanding the risk of working with people who have been traumatized, it is first necessary to define what is meant by trauma. Efforts to define the term have been numerous making a simple definition nearly impossible (Dalenberg et al., 2017). This study uses the definition of trauma from the *Diagnostic and Statistical Manual of Mental Disorders-5* (*DSM-5*;American Psychiatric Association, 2013). This definition refers to individuals over the age of six. For children six years and younger, the *DSM-5* adds primary caregivers such as parents to the first, second, and third ways listed below:

> Exposure to actual or threatened death, serious injury, or sexual violence in one (or more) of the following ways:
>
> 1. Directly experiencing the traumatic event(s).
> 2. Witnessing, in person, the event(s) as it occurred to others.
> 3. Learning that the traumatic event(s) occurred to a close family member or close friend. In cases of actual or threatened death of a family member or friend, the event(s) must have been violent or accidental.
> 4. Experiencing repeated or extreme exposure to aversive details of the traumatic event(s) (e.g., first responders collecting human remains; police officers repeatedly exposed to details of child abuse). (American Psychiatric Association, 2013)

The *DSM-5* also outlined three categories of risk (increasing the likelihood of) and protective (decreasing the likelihood of) factors in the development of PTSD: pretraumatic, peritraumatic, and posttraumatic factors. Most pertinent to the current discussion are the pretraumatic factors which are divided into temperamental, environmental, and genetic/physiological levels. These pretraumatic risk factors include low socioeconomic status, minority status, family mental health problems, prior traumatic event exposure, and childhood adversity such as poverty, parental separation, and family dysfunction (American Psychiatric Association, 2013). For the sake of clarity, pretraumatic factors and traumatic events specifically related to childhood will be referred to throughout this paper as adverse childhood experiences (ACEs), an acronym coined by the landmark Felitti et al. (1998) study. The aforementioned study correlated a number of ACEs (i.e., sexual, physical, and emotional abuse; physical and emotional neglect; and household dysfunction including parental divorce, maternal abuse,

substance abuse, mental illness, and parental incarceration) with long-term physical and mental health outcomes such as cancer, heart disease, obesity, promiscuity, alcoholism, depression, and suicide attempts. ACEs are prevalent with studies showing 64% (Anda et al., 2006) and 61% (Merrick et al., 2019) of respondents reported having experienced at least one ACE before the age of 18. Van der Kolk (2005) has argued that ACEs may be the most significant threat to public health in the United States.

More recently, some researchers warn that the COVID-19 pandemic could exacerbate trauma and ACEs in individuals (Higgins, 2020). Such warnings are supported by past research on the emotional and psychological effects of quarantines. In one recent review of quarantine literature, for example, short-term stressors such as fear, frustration, boredom, and financial loss were reported, with long-term post-traumatic stress symptoms including depression, anxiety and anger suggested (Brooks et al., 2020).

Statement of the Problem

As discussed earlier, those who work with people who have experienced ACEs and trauma are at risk for costs to caring (Figley, 1995). Teachers, however, are often omitted from the discussion of such professions. Figley and Ludick (2017) listed a number of professions routinely exposed to traumatized individuals and traumatic materials (e.g., photographs, case files, personal accounts) including "psychologists, law enforcement, social workers, lawyers, and other professionals who interact with victims of trauma, such as law librarians, taxi drivers, hair dressers, insurance claim adjusters, judges, and elected officials" (p. 573). Further, in an extensive bibliography of over 2,000 studies related to costs to caring, only four studies mentioned teachers, with a number of others referring to the educators of students in professions such as social work and nursing (Stamm, 2016).

Thousands of teachers, however, are among those who work every day with children who have experienced ACEs (van der Kolk, 2014, p. 152). Teachers should therefore be among the professions understood to be at risk for the costs to caring that may result from working with such children. This is especially important as failing to address costs to caring may lead to burnout and a desire to leave the profession, as discussed earlier in this introduction. Anything that may lead to teacher attrition can be considered to be especially important now as the United States is currently experiencing a teacher shortage (Betancourt, 2018). Estimates are that by 2025 the shortages could reach over 118,000 teachers (Sutcher et al., 2016). While the reasons for teacher shortages are complex, two variables that have been shown to have an effect on teacher attrition are school climate and teacher burnout. (Chang, 2013; Maslach et al., 2001; Sutcher et al., 2016) both of which have been shown to be impacted by ACEs and trauma (Chafouleas et al., 2018; Perfect et al., 2016).

Although it can be argued that some teachers have always recognized the effects of ACEs on their students, and therefore such a focus is not needed, it has not been until recent decades that the awareness of ACEs and their impacts on students have become widespread (Overstreet & Chafouleas, 2016). As most children who access mental health services do so in school, many have determined that the most logical place for ACEs interventions to take place is within schools (Farmer et al., 2003; Plumb et al., 2016). In response, many districts have implemented practices that can been described as trauma-sensitive, trauma-informed, and trauma-responsive (Blodgett & Dorado, 2016; Phifer & Hull, 2016). For clarity, I will use the term trauma-sensitive schools (TSS) when referring to such programs. Most TSS consist of the Substance Abuse and Mental Health Services Administration's (SAMHSA) "4Rs" in response to trauma and ACEs. These require a *realization* of trauma's widespread impact, a *recognition* of the symptoms and

signs of trauma of all stakeholders, and for the trauma-informed to *respond* with trauma sensitive practices, and *resist* re-traumatization (*SAMHSA's Concept of Trauma and Guidance for a Trauma-Informed Approach*, 2014).

Schools in many states have begun to incorporate TSS practices voluntarily. In late 2019 and early 2020 the State of Maine Department of Education (MDOE), for example, designed a number of TSS workshops which they described as "the most requested support topic from the field" (*Trauma informed readiness and response planning workshop*, 2019). At the first workshop, 65 school teams of three members per team gathered to discuss ACEs and other TSS topics.

Other states have passed legislation which require districts to address ACEs in their schools. California's legislature, for example, passed (although it was later vetoed by the governor) AB-2691: The Trauma-Informed Schools Initiative "to address the impact of adverse childhood experiences on the educational outcomes of California pupils" (2018). In another recent example, the State of Tennessee signed into law Senate Bill No. 1386 requiring that the state's Department of Education to create an "evidence-based training program on ACEs for school leaders and teachers" (2018). In 2017, 2018, and 2019, at the national level, a "Trauma-Informed Schools Act," an amendment to the Elementary and Secondary Schools Act of 1965, has been introduced in the House of Representatives and referred to the Committee on Education and Labor. The 2019 version of the act would require evidence-based ACEs professional development for all school staff. Researchers have noted that practitioners who work with those who have experienced adversity similar to their own may be more at risk for costs to caring (Hensel et al., 2015), which suggests that this focus on ACEs in schools may place teachers at a risk for similar outcomes.

Although the National Child Traumatic Stress Network (2008) provided tools for teachers on costs to caring over a decade ago, a gap in actual research remains. Though a number of dissertations have looked at the costs to caring as they relate to the concept of trauma and educators (e.g., see Denham, 2018; Santa, 2016; Schepers, 2017) as of this writing, there have only been three published studies on the topic, each of which include sample limitations which make generalizability difficult (Borntrager et al., 2012; Caringi et al., 2015; Koenig et al., 2018).

According to Molnar et al. (2017)

> Taking a public health approach to preventing negative impacts on professionals exposed to vicarious or secondary trauma requires four steps: (a) defining the problem including measuring the scope or prevalence, (b) identifying risk and protective factors for negative outcomes, (c) developing interventions and policies, and (d) monitoring and evaluating interventions and policies over time. (p. 129).

Purpose of the Study

The purpose of this quantitative study is two-fold. First, the purpose is to understand the extent to which Maine teachers experience costs to caring defined in this study as STS, burnout, and a desire to leave the profession. Next, the purpose is to test a conceptual Teacher Costs to Caring Resilience Model (TCCRM) using structural equation modeling (SEM). This model identifies potential personal and organizational mediating factors that contribute to the extent to which Maine teachers experience costs to caring.

Research Questions

1. What is the extent to which Maine teachers experience costs to caring?

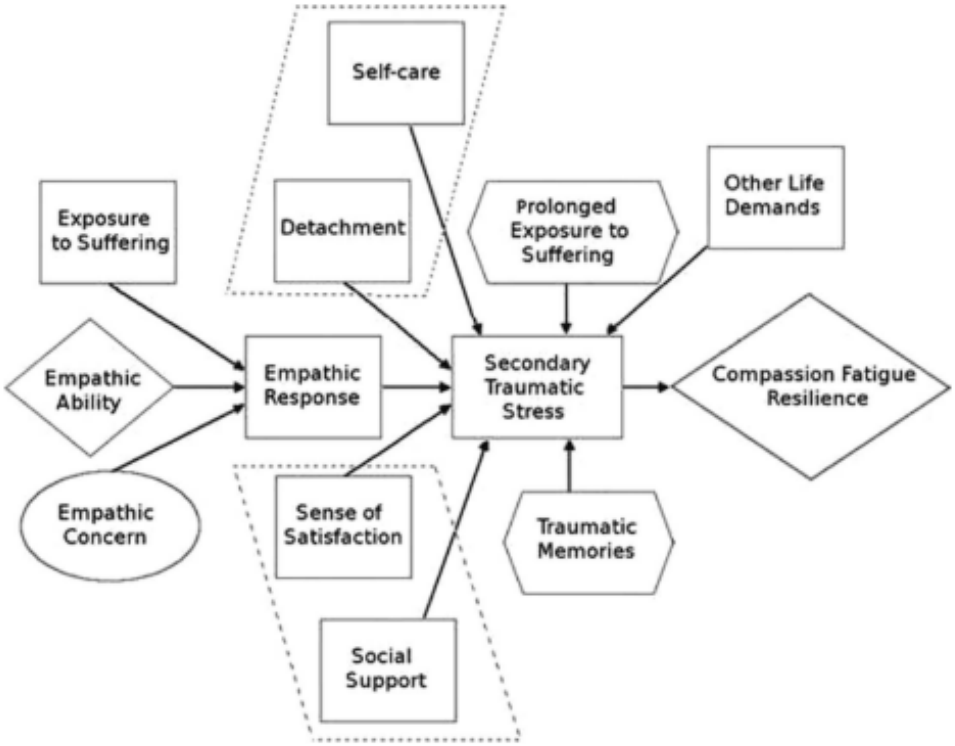
2. How are these costs to caring related to Maine teachers' personal and professional ACEs exposure?
3. What personal and organizational mediating factors contribute to the extent to which Maine teachers are currently experiencing costs to caring?

Theoretical and Conceptual Framework

In order to mitigate the effects of working with the traumatized, Ludick and Figley (2017) suggested a 12-factor Compassion Fatigue Resilience Model (CFRM) as shown in Figure 1.1. The researchers' concept of compassion fatigue resilience refers to recovering from compassion fatigue and not to overall resilience which will be further discussed in Chapter Two. The CFRM theorizes that it is a person's empathic ability and empathic concern as well as exposure to suffering that puts them most at risk for STS, one of the costs to caring. The model further hypothesizes a number of protective factors such as self-care, the ability to detach from another's trauma, the ability to gain a sense of satisfaction from the work, and strong social support as factors that lead to compassion fatigue resilience. The CFRM further suggests the responder's own traumatic past and other life stressors may contribute to compassion fatigue and compassion fatigue resilience.

Figure 1.1

Compassion Fatigue Resilience Model

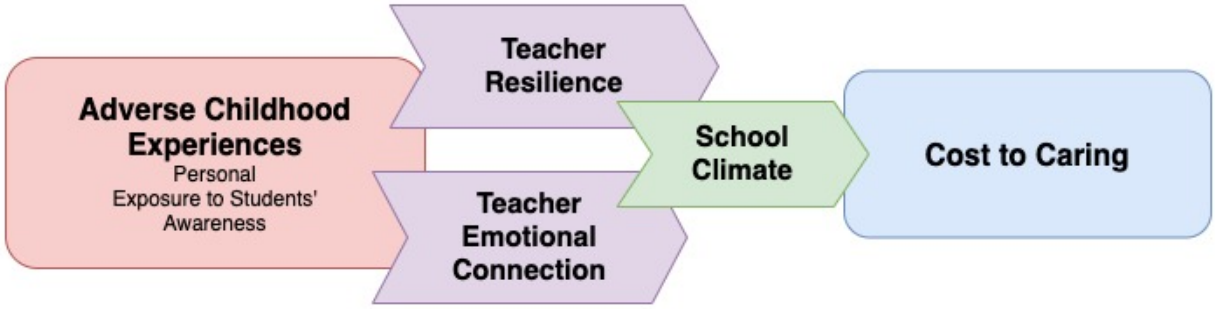


Note. From "Toward a Mechanism for Secondary Trauma Induction and Reduction: Reimagining a Theory of Secondary Traumatic Stress," by M. Ludick and C. R. Figley, 2017, *Traumatology*, *23*(1), p. 114 (https://doi.org/10.1037/trm0000096). Copyright 2016 by the American Psychological Association. Reprinted with permission.

Because the primary role of teachers is not specific to mental health, I hypothesized that for teachers, the resilience from costs to caring may be different than the CFRM. Drawing from the CFRM, the following conceptual framework provided in Figure 1.2 informed the current study:

Figure 1.2

Hypothesized Conceptual Framework



First, working with individuals who have experienced trauma (McCann & Pearlman, 1990) along with their own prior history of trauma (Baird & Kracen, 2006) have been shown to be contributing factors in the development of costs to caring. Because ACEs are the primary type of trauma currently discussed in schools (Overstreet & Chafouleas, 2016), I hypothesized that teachers' understanding of ACEs, personal history of ACEs, and caseload of students who have experienced ACEs would have a significant effect on the extent to which they experience costs to caring. I further hypothesized that teachers' personal protective factors of resilience (the ability to bounce back from adversity) and their emotional connection to others and their profession mediated the extent to which they experienced costs to caring. Finally, I hypothesized that school climate, defined here as the perceived quality of relational and organizational supports within their current school, also acted as a mediating variable.

Significance of the Study

Even though extant literature supports the implementation of TSS practices (Chafouleas et al., 2016; Zakszeski et al., 2017), the evidence base for such practices is limited (Overstreet & Chafouleas, 2016) with most of the current research focusing on student outcomes (Jimenez et al., 2016; Porche et al., 2016). Research on educators, however, has suggested that they

experience STS at levels similar to the levels experienced by mental health workers (Borntrager et al., 2012). These findings are concerning as teacher stress has been found to negatively affect teacher performance and effectiveness in the classroom (Blase, 1986).

It is difficult to ascertain, however, if the findings of Borntrager et al. (2012) are unique to teachers as the sample in that study included a variety of school professionals including social workers and counselors, roles already at higher risk for costs to caring (Pearlman & Saakvitne, 1995b). In fact, of the three published studies involving costs to caring and educators (Borntrager et al., 2012; Caringi et al., 2015; Koenig et al., 2018) only Caringi et al. (2015) focuses specifically on teachers. The latter study's sample also makes generalization difficult, as participants were recruited from the Borntrager et al. (2012) sample which not only consisted of participants who attended an STS training, but also included 20% identifying as Native American. The latter information may prove most problematic to generalization as trauma and ACEs are widely documented in that population (Evans-Campbell, 2008; Kenney & Singh, 2016) putting those educators more at risk of experiencing costs to caring than other racial and ethnic counterparts.

Unlike these previous studies, the population of the State of Maine, the location of the current study, has been described as both the oldest and the whitest state in the nation (Fishell, 2015). In the United States, Maine also has the highest rate of children diagnosed with anxiety disorders and the third highest rate of those diagnosed with depression (*2019 Maine kids count*, 2019). These factors suggest Maine may be too unlike the previous studies to rely on their findings.

Perhaps most pertinent to the current discussion, however, is the effect that the wide-ranging school closures due to the COVID-19 pandemic will have on teachers. Pfefferbaum and

North (2020) warn that the pandemic has "alarming implications for individual and collective health and emotional and social functioning" (p. 3). Early research from China has suggested that the isolation resulting from widespread quarantines result in a number of psychosocial problems including panic disorders, anxiety, and depression (Qiu et al., 2020). In schools, mental health professionals warn of "widespread emotional trauma" resulting from the pandemic and suggest providing emotional care and professional development for educators to support the students and themselves (Minke, 2020). Maine's own draft reopening plan calls for schools to "plan for school-wide trauma informed practices" and to "encourage staff in professional development to increase awareness of the signs of anxiety and depression" (Maine Department of Education, 2020). As schools cope with the effects of COVID-19, the current study may help to address needs related to the resilience of teachers.

Definitions of Terms

The following is a list of definitions that will be used throughout the current study. A more in-depth discussion of each term will be provided in Chapter Two.

Adverse Childhood Experiences (ACEs)

Pretraumatic and traumatic events that are specifically related to childhood. These events include physical, sexual, and emotional abuse; physical and emotional neglect; and household dysfunction including parental divorce, maternal abuse, substance abuse, mental illness, and parental incarceration (American Psychiatric Association, 2013; Felitti et al., 1998).

Burnout

Contains three fundamental components regarding one's job: exhaustion, cynicism, and inefficacy, the latter defined as the lack of individual achievement (Maslach et al., 2001).

Compassion Fatigue

Exhaustion resulting from caring from others (Figley & Ludick, 2017).

Compassion Fatigue Resilience

A "form of resilience [that] offers adaptation and coping as well as resistance to STS that allows the trauma exposed person to develop into a confident, caring, competent worker and social being" (Ludick & Figley, 2017, p. 116).

Costs to Caring

Specific to this study: STS, burnout, and a desire to leave the profession (Figley, 1995).

Empathy

"The degree to which instructors work to deeply understand students' personal and social situations, feel caring and concern in response to students' positive and negative emotions, and communicate their understanding and caring to students through their behavior" (Meyers et al., 2019, p.161).

Resilience

The ability to bounce back from adverse experiences with limited negative outcomes (Wagnild, 2014).

School Climate

"The extent to which a school community creates and maintains a safe school campus; a supportive academic, disciplinary, and physical environment; and respectful, trusting, and caring relationships throughout the school community" (U.S. Department of Education, 2014)

Secondary Traumatic Stress (STS)

The physical and emotional problems that can occur from working with those who are traumatized including sleep disturbances and gastrointestinal problems, as well as problematic imagery and stressful emotions (Dutton & Rubinstein, 1995).

Trauma

According to the *DSM-5*:

Exposure to actual or threatened death, serious injury, or sexual violence in one (or more) of the following ways:

5. Directly experiencing the traumatic event(s).
6. Witnessing, in person, the event(s) as it occurred to others.
7. Learning that the traumatic event(s) occurred to a close family member or close friend. In cases of actual or threatened death of a family member or friend, the event(s) must have been violent or accidental.
8. Experiencing repeated or extreme exposure to aversive details of the traumatic event(s) (e.g., first responders collecting human remains; police officers repeatedly exposed to details of child abuse). (American Psychiatric Association, 2013)

Trauma Sensitive Schools (TSS)

Any school that includes practices considered trauma-informed, trauma-responsive, or trauma-sensitive. TSS typically *realize* trauma's widespread impact, *recognize* the symptoms and signs of trauma of all stakeholders, *respond* with trauma sensitive practices, and *resist* re-traumatization (*SAMHSA's Concept of Trauma and Guidance for a Trauma-Informed Approach*, 2014).

CHAPTER TWO

A REVIEW OF THE LITERATURE

This chapter begins with a review of the costs to caring literature and how these costs have been studied in education. The chapter moves to an explanation of the CFRM, the theoretical model used in this study. The chapter then ends with a discussion of various risk and protective factors related to costs to caring and teachers including trauma, ACEs, school climate, resilience, and compassion satisfaction.

The Costs to Caring

Figley (1995) described "cost[s] to caring" (p. 1) as effects resulting from working with those who have experienced trauma. These costs fall under a number of monikers including vicarious traumatization, compassion fatigue, STS, and burnout. This work originates, in part, from the experience of family members of traumatized veterans. In an early review of the literature, Solomon (1988) found that families of veterans have several detrimental effects resulting from of the veterans' traumatic wartime experiences. For example, the wives of veterans were described as falling into a "compassion trap" (p. 327) sacrificing their needs for the needs of their husbands' and many children of veterans show the secondary traumatic signs of depression and distress (Solomon, 1988).

Vicarious Traumatization

McCann and Pearlman (1990) noticed that those working with the traumatized may incorporate the traumatic experiences and mental schemas of others into their own resulting in symptoms similar to PTSD. As a result, these helpers may become distrustful, depressed, or feel stigmatized. The authors termed what they were observing as "vicarious traumatization" defined as experiencing the traumatic experiences of another secondhand. They further noted "profound

psychological effects, effects that can be disruptive and painful for months or even years after work with traumatized persons" (McCann & Pearlman, 1990, p.133). Pearlman and Saakvitne (1995) suggested that vicarious traumatization is a natural, perhaps even inevitable, result of empathic practitioners working with the traumatized that if untreated could lead to "cynicism and despair" (p. 33).

Countertransference

According to Pearlman and Saakvitne (1995), vicarious traumatization is related to, but a distinct concept from, the psychodynamic concept of countertransference, defined as "the activation of the therapist's unresolved or unconscious conflicts or concerns" (McCann and Pearlman, 1990, p. 134). Countertransference is similar to the Freudian concept of transference which was described as "intense affectionate emotions, which the patient has transferred to the physician" (Freud, S., 1920, pp. 380-381). Instead, countertransference consists of intense emotions transferred from the therapist to the patient and are a result of "unresolved or unconscious conflicts or concerns" of the therapist (McCann & Pearlman, 1990, p. 134). Pearlman and Saakvitne (1995) emphasized that countertransference is a normal reaction in therapy, and if recognized, can actually work as an advantage in the therapist-client relationship. If not understood, however, the results could be overwhelming and erode that relationship. Even though countertransference is not particular to working with trauma victims, the researchers further suggested an interactive and cyclical relationship between vicarious traumatization, which is specific to working with the traumatized, and countertransference, which is not. The interaction of the two factors may result in an emotionally reactive situation for both client and therapist if the therapist is unaware of the relationships of the two factors. Figley (1995) made a

distinction between countertransference, which he stated should be avoided in therapy, and STS which he defined as a normal reaction to working with the traumatized.

Compassion Fatigue and Secondary Traumatic Stress

Some who experience vicarious traumatization may, according to Figley and Ludick (2017) go on to experience compassion fatigue and STS. Compassion fatigue, as the name suggests, can be understood as exhaustion resulting from caring from others. Figley and Ludick (2017) described compassion fatigue as a form of PTSD and an outcome of STS. According to Dutton and Rubinstein (1995) reactions of STS include a variety of somatic complaints such as sleep disturbances and gastrointestinal problems, as well as emotional problems involving problematic imagery and stressful emotions. Stamm (2009) defined compassion fatigue as an umbrella term that encompasses both STS and burnout, the latter of which is discussed in the following section.

Burnout

Burnout is a concept that is studied across professions and can be defined through its three fundamental components: exhaustion, cynicism, and inefficacy, the latter defined as the lack of individual achievement (Maslach et al., 2001). Burnout can have a number of detrimental effects, particularly in the helping professions. Cerney (1995) found that burnout may cause therapists to become disgusted by their patients. Castillo-Gualda et al. (2019) found that emotional regulation was positively correlated with personal accomplishment, a factor that mitigates burnout.

Costs to Caring and Educators

Although groups like the National Child Traumatic Stress Network have discussed the possibility of teachers experiencing costs to caring for more than a decade (National Child

Traumatic Stress Network, 2008), empirical studies on the subject are scarce. This may be due, in part, to the experts in the field all but ignoring educators in the discussion. Figley and Ludick (2017) mentioned the following professions as examples of those who are regularly exposed to traumatic materials: “psychologists, law enforcement, social workers, lawyers, and other professionals who interact with victims of trauma, such as law librarians, taxi drivers, hair dressers, insurance claim adjusters, judges, and elected officials” (p. 573). Likewise, in an extensive bibliography of over 2,000 studies related to costs to caring, only 4 studies mentioned teachers, with a number of others referring to the educators of students in professions such as nursing and social work (Stamm, 2016). As discussed earlier, schools are increasingly becoming aware of ACEs and their effects on students, thereby putting them at risk of these costs of caring. While a number of recent doctoral dissertations have sought to understand the relationship among trauma, STS, compassion fatigue and educators (e.g., see Denham, 2018; Hill, 2011; Santa, 2016; Schepers, 2017), as of this writing, there are currently only three published studies linking these concepts to a school setting (Borntrager et al., 2012; Caringi et al., 2015; Koenig et al., 2018).

Borntrager et al. (2012) were the first to research trauma and STS in school personnel. The quantitative study consisted of 229 STS workshop participants from six different school districts located in the Northwestern United States. The sample included a range of school personnel including teachers, administrators, counselors, and school social workers. The districts ranged from rural to urban and included public and tribal schools. Borntrager et al. (2012) hypothesized that low levels of social support and high levels of personal trauma history, desire to leave position, and organizational relationship discouragement would correlate to higher levels of STS. Descriptive statistics and multiple regression were then used to determine results.

The researchers found that 75% of the participants had higher than expected levels of STS, but only slightly higher than normal levels of burnout. They also found that STS correlated positively with the employee looking for another job, a cost to caring in this current study. While 76.4% of participants said they had some sort of trauma history, the researchers were surprised to find that this did not correlate with STS. The participants, however, showed what the researchers deemed "relatively high levels of emotional connectedness" (p. 46) with coworkers. This attachment, they suggest, may serve as a resilience factor. Another factor seemed to be having an employer who encourages talking with peers about stress. This factor was negatively correlated at significant levels with compassion fatigue and STS, as well as being emotionally connected to co-workers (Borntrager et al., 2012). The researchers also found that these participants had a slightly higher level of compassion satisfaction than expected.

There are a number of limitations of the study that may have contributed to some of the results. First, the high level of prevalence of personal trauma in this study may be due to the way which it was measured. Unlike the ACEs questionnaire, the questions in this study were extremely broad allowing for a wide range of interpretations of personal trauma. Also, the study sample cannot be considered representative with 20% of the participants describing themselves as Native Americans. While the researchers suggest that this adds gravity to their study as indigenous populations are historically more traumatized, the disproportionality makes this study difficult to generalize. Finally, the study is cross-sectional, and the authors further noted that no causal inferences can be made.

The second study, which was a qualitative follow up to Borntrager et al. (2012), used the previous researchers' sample and chose 15 teachers to conduct qualitative telephone interviews (Caringi et al., 2015). The researchers sought to determine the contributing factors leading to

compassion satisfaction, STS and burnout missing from the Borntrager et al. (2012) study. The researchers completed semi-structured telephone interviews with a framework consisting of hypothesized contributing factors such as personal trauma history, caseload, and type of cases. Findings supported those of Borntrager et al. (2012) in that caseload of traumatized students was a contributing factor to STS. The authors further found that social support as well as feeling "successful" (Caringi et al., 2015, p. 251) with students mitigated the previous mentioned effects. The researchers suggested using a multi-tiered system of support framework to address STS and school personnel. Tier one supports could include setting up a process to understand signs and symptoms of STS along with open discussions with colleagues with tiers two and three providing more targeted and specific support.

The limitations of the Caringi et al. (2015) study are again due to the sample type and size, and the methodology of interviews. The sample was drawn from the same sample used in Borntrager et al. (2012) which as discussed earlier, has some problems with generalizability. Interviews were also completed by telephone which leaves, as Caringi et al. (2015) point out "no ability to interpret body language, emotion, or other means of communication requiring face-to-face contact" (p. 254).

The final published study to be discussed is pilot study of 64 educators from Southwestern Ontario attending a professional development workshop on STS, compassion fatigue, burnout, and self-care (Koenig et al., 2018). Part of the study sought to evaluate the workshop's effectiveness on participants understanding of the concepts listed above, and the other to determine the levels and relationships between STS, personal accomplishment, and burnout amongst the educators.

Koenig et al. (2018) found that educators' levels of emotional exhaustion were positively correlated with STS and depersonalization, both factors of burnout according to Maslach et al. (2001). Depersonalization was also positively correlated with STS. There was also a substantial prevalence of emotional exhaustion in the sample with 24% of participants reporting high levels. The researchers were surprised to find that levels of personal accomplishment were not correlated at all with any of the measures of burnout (STS, emotional exhaustion, or depersonalization). Koenig et al. (2018) hypothesized that the discrepancy may be due to the difference in measurement and concept definitions. The small sample size and lack of other possible latent variables may also contribute to the lack of significance. The study's cross-sectional design makes it difficult to determine if the knowledge gained about the concepts, which did support the researchers' hypothesis, will persist as the pre- and post-workshop researcher generated questionnaire was given immediately before and after the workshop. Also, only 54.8% of the sample was made up of teachers, with 15.6% labeled as educational assistants and 9.4% school administrators, making the small sample of 64 even smaller.

All three of the above studies support the claim that educators, like others working with the traumatized, may be at risk of Figley's (1995) costs of caring. Further research then, especially with teachers specifically as they are the individuals most directly in contact with students, seems warranted.

Fleming, Mackrain, & LeBuffe (2013) noted a variety of adverse outcomes that can occur from teachers not caring for themselves: reduced teacher availability, impairment in the ability of teachers to model social and emotional competence, and direct negative effects on children including apathy, reduced student achievement, student motivation, and student self-efficacy (p. 390-392). The researchers cited a litany of stressors that teachers encounter that can impact their

emotions including sleep deprivation, an increase in poor student behaviors, an increase in student absences, an increase in unsupportive parents, an increase in paperwork, a lack of resources, a lack of control in school decision-making, and an increase in school-reform legislation. These stressors on teachers can impact the availability of teachers to students, the ability of teachers as being positive social and emotional role models for their students, and other negative effects on their students (Fleming et al., 2013).

Teacher Burnout

In education, reasons for teacher burnout can include both organizational factors (e.g. student behavior, job demands, work overload, role conflict, administrative and colleague support) and personal factors (e.g. self-efficacy, dedication, engagement, reactive or proactive coping; McCarthy et al., 2016). Chang (2013) found that even one emotional episode experienced by teachers can have a deleterious impact on their own emotions, which may lead to an increase in burnout. The likelihood of having such an experience is high considering the estimation that elementary teachers have 200-300 interactions with students per hour, which extrapolated out would make for 1200-1500 interactions with students per day (Jackson, 1990). One component of burnout, emotional exhaustion, was also found to be a mediator between teacher work stress and depressive symptoms (Steinhardt et al., 2011), and emotional exhaustion and cynicism have been found to be correlated with negative teacher outcomes such as negative teacher emotional intensity (Fiorilli et al., 2017). How teachers appraise situations have also been shown to affect burnout (Chang, 2013; Tsouloupas et al., 2010). Tsouloupas et al. (2010) and Jiang et al. (2016) found that teachers' beliefs about challenging situations play an important role in teachers' emotional regulation, a factor in predicting burnout. Tsouloupas et al. (2010) also noted a positive correlation between a teacher's self-efficacy, perceived student misbehavior, and

emotional exhaustion. Ultimately, teacher burnout has been shown to be a strong predictor of teachers' desire to change professions (Skaalvik & Skaalvik, 2017; Tsouloupas et al., 2010).

Compassion Fatigue Resilience Model

To mitigate the effects for practitioners such as mental health workers and first responders who work with those who have been traumatized, Ludick and Figley (2017) suggested the 12-factor CFRM as previously shown in Figure 1.1. Based on prior published studies, the model includes a number of predictors of STS, which the authors stated lead to either compassion fatigue or compassion fatigue resilience. The authors defined the latter as a "form of resilience [that] offers adaptation and coping as well as resistance to STS that allows the trauma exposed person to develop into a confident, caring, competent worker and social being" (Ludick & Figley, 2017, p. 116).

The CFRM is based on nine stipulations regarding STS: 1) STS is a normal result of working with traumatized individuals and cannot be avoided, 2) STS is most often present when helpers are exposed to realistic images, memories, or feelings of traumatic events, 3) STS levels are increased due to helpers using empathy with traumatized, 4) STS levels are increased when helpers do not deal with stress reactions, 5) STS levels are increased if a helper has higher exposure to the trauma of others, 6) STS levels are increased when the helper's own traumatic memories are invoked, 7) STS levels decrease with an increase in compassion satisfaction, 8) STS levels decrease with higher levels of social support, 9) While STS is related to one's levels of compassion fatigue resilience, other factors may also impact STS (Ludick & Figley, 2017, p. 113). The CFRM is divided into three sectors: empathic stance, STS sector, and compassion fatigue resilience sector, each of which will be described below.

Empathic Stance

The empathic stance sector contains the three factors of exposure to suffering, empathic ability, and empathic concern, all of which contribute to the practitioner's empathic response. According to the authors, exposure to suffering is the primary pathway to STS and the means by which a practitioner experiences and internalizes the trauma of others. Exposure to suffering may also occur through a number of direct exposures including a client who has experienced trauma; to a close contact such as a family member, colleague or friend who has experienced trauma; or a witness to traumatizing events. Exposure to suffering may also occur through indirect exposure to traumatic materials such as court case files, library artifacts, and insurance claims (Ludick & Figley, 2017, pp. 113-114). The authors define empathic concern as the "explicit, high level of compassion and interest in helping clients meet their needs as well as an innate tendency of universal importance in human interactions" (p. 114). The authors further suggested that the greater the practitioner's empathy, the greater risk for that practitioner to experience STS. The empathic ability of a practitioner, then, refers to the actual capability of practitioners to empathize with those who have experienced trauma. Both empathic concern and empathic ability inform the empathic response of the practitioner. The goal of an empathic response is to relieve the suffering of another and may or may not be the primary role of the practitioner.

STS Sector

The STS sector includes three risk factors in STS development: prolonged exposure to suffering, traumatic memories, and other life demands (Ludick & Figley, 2017). First, the repeated exposure to negative emotions, encounters, stories, and experiences by empathic individuals who work with those who have experienced trauma may put practitioners more at risk for developing secondary traumatization than those who are not exposed to such suffering. The authors also note the possibility that a practitioner's memories of their own personal trauma

may not only increase their risk for developing STS, but also increase their risk for developing PTSD-like symptoms such as nightmares and flashbacks. Finally, Ludick and Figley acknowledge that life demands that act as a disruption from daily routine and separate from their work with those who have experienced trauma, may increase practitioners' risk of developing STS. On their own, such life demands may be manageable, but experienced together with the demands of work, the life demands act as a risk factor in the development of STS.

Compassion Fatigue Resilience Sector

In the final sector of the model, Ludick and Figley (2017) identify a number of protective factors that aid in STS resistance and in the development of compassion fatigue resilience: self-care, detachment, sense of satisfaction, and social support. Self-care can be defined as "the learnt behavior of practices and activities initiated and performed by individuals to maintain health, life and well-being" (p. 117). The authors further noted that those who work with the traumatized often show more care towards their clients than towards themselves. The authors suggested that training and recognition of the importance of self-care practices may better help to develop compassion fatigue resilience. Detachment refers to the ability for a practitioner to mentally and physically separate from their job and their clients when not at work. Such detachment may help to give practitioners a respite from the aforementioned prolonged exposure to traumatic materials and those who have been traumatized. Ludick and Figley further noted, however, that too much detachment may have the opposite effect, in essence making practitioners less successful in their jobs. The next protective factor, sense of satisfaction, refers to the sense of fulfillment and gratification a practitioner receives from helping those who have been traumatized. This sense of satisfaction has been found to be strongly correlated with resilience, and inversely correlated with STS (p. 117). The final protective factor in the CFRM is social support. The authors stated

that relationships with caring people provide support and buffer against the prolonged exposure to the suffering of others, helping to create compassion fatigue resilience.

Risk and Protective Factors for Teachers

The CFRM, as previously stated, was not designed specifically for teachers. Thousands of teachers, however, are among those who work every day with children who have experienced ACEs (van der Kolk, 2014). Teachers should, therefore, be among the professions understood to be at risk for the costs to caring that may result from working with such children. This is especially important as failing to address costs to caring may lead to burnout and a desire to leave the profession (Skaalvik & Skaalvik, 2017; Tsouloupas et al., 2010). Anything that may lead to teacher attrition can be considered to be especially important now as the United States is currently experiencing a teacher shortage (Betancourt, 2018). Estimates are that by 2025 the shortages could reach over 118,000 teachers (Sutcher et al., 2016). Although the reasons for teacher shortages are complex, two variables that have been shown to have an effect on teacher attrition are school climate and teacher burnout (Chang, 2013; Maslach et al., 2001; Sutcher et al., 2016), both of which have been shown to be impacted by ACEs and trauma (Chafouleas et al., 2018; Perfect et al., 2016).

The following sections will outline the risk and protective factors related to costs to caring that are used in the current study and discuss how each of those factors are related to teachers.

Trauma

According to Kurtz (2018), “We live in an age of trauma” (p.1). The word “trauma” originated from the Greek meaning “wound.” The first known use of the word in psychology was not until 1894 where trauma is also described as “thorns in the spirit” (Trauma, n., 1989). It was

not until 1980, with the inclusion of PTSD in the *Diagnostic and Statistical Manual of Mental Disorders III* (DSM-III) that interest in the psychological impacts of trauma proliferated (National Institutes of Health, 2010). The word has since become ubiquitous, with a recent Google search resulting in 276,000,000 entries with all of the top results referring to trauma's emotional impacts (16, June 2020).

As trauma has become part of the zeitgeist of our time, the efforts to define the term are numerous making a simple definition nearly impossible (Dalenberg et al., 2017). As discussed in Chapter One, the *DSM-5* definition is used in the current study. This definition refers to individuals over the age of six. For children six years and younger, the *DSM-5* adds primary caregivers such as parents to the first, second, and third ways listed below:

> Exposure to actual or threatened death, serious injury, or sexual violence in one (or more) of the following ways:
>
> 9. Directly experiencing the traumatic event(s).
> 10. Witnessing, in person, the event(s) as it occurred to others.
> 11. Learning that the traumatic event(s) occurred to a close family member or close friend. In cases of actual or threatened death of a family member or friend, the event(s) must have been violent or accidental.
> 12. Experiencing repeated or extreme exposure to aversive details of the traumatic event(s) (e.g., first responders collecting human remains; police officers repeatedly exposed to details of child abuse). (American Psychiatric Association, 2013)

The *DSM-5* also outlined three categories of risk (increasing the likelihood of) and protective (decreasing the likelihood of) factors in the development of PTSD: pretraumatic,

peritraumatic, and posttraumatic. Most pertinent to the current discussion are the pretraumatic factors. These factors are divided into temperamental, environmental, and genetic/physiological levels. These pretraumatic risk factors include low socioeconomic status, minority status, family mental health problems, prior traumatic event exposure, and childhood adversity such as poverty, parental separation, and family dysfunction (American Psychiatric Association, 2013). For the sake of clarity, pretraumatic factors and traumatic events specifically related to childhood will be referred to throughout this paper as adverse childhood experiences (ACEs), an acronym coined by the landmark Felitti et al. (1998) study which will be further described in the next section.

Although there are many factors that may contribute to compassion fatigue, STS, vicarious traumatization, and burnout, some research to suggests that a person's trauma history may contribute to such costs of caring. In a review of the empirical and conceptual literature on STS, Bride and Walls (2006) found that while two studies did not link personal trauma history to higher levels of STS, several more studies did find that a person's trauma history put them at higher risk for STS. Likewise, in another review, Baird and Kracen (2006) identified six studies with persuasive evidence that personal trauma histories were linked to vicarious traumatization and four studies with reasonable evidence that personal trauma histories were linked to STS. In a more recent meta-analysis on literature of therapists and STS, Hensel et al. (2015) found that personal trauma, especially if it is the same type of trauma as experienced by their clients, as well as caseload and emotional involvement, were risk factors for STS.

Adverse Childhood Experiences (ACEs)

As previously noted, practitioners who work with those who have experienced similar trauma to themselves may be at risk of experiencing costs to caring (Figley, 1995; McCann &

Pearlman, 1990). In education, arguably the most common types of trauma experienced by students are ACEs (Cole et al., 2005).

The original ACEs study examined ten types of childhood trauma in over 17,000 predominantly white, middle-class Americans: three types of abuse (physical, sexual, and emotional), two types of neglect (physical and emotional), and five types of household dysfunction (mental illness, parental divorce, parental incarceration, maternal abuse, and substance abuse; Felitti et al., 1998). For each of the ACEs identified, the respondent received one point, for a possible total of ten. Almost two-thirds identified at least one of the ACEs, with one-quarter having two or more ACEs. The researchers also found that each of the ACEs had a dose-response effect with higher numbers of ACEs resulting in increases in mental and physical health problems (Anda et al., 2006). The researchers further noted that respondents who identified having four or more ACEs were four to twelve-fold more likely to suffer from alcoholism, drug abuse, and/or depression; two to four-fold more likely to be a smoker, and/or have greater than 50 sexual partners; and one-and-a-half-fold more likely to be obese. The study also showed a correlation between the numbers of ACEs the respondents reported and an increase in adult diseases such as heart disease, cancer, and chronic lung disease (Felitti et al., 1998). Ultimately, the researchers found that as the individual's ACEs score rose, the mean number of comorbid conditions tripled (Anda et al., 2006). Research has since discovered similar levels of prevalence of ACEs in a number of populations. McLaughlin et al. (2013), for example, found a 61.8% prevalence of having one or more ACEs in a sample of adolescents, and Merrick et al. (2019) found a 61% prevalence in a large cross-sectional survey over 25 states. This prevalence of ACEs has been described as a "public health crisis" which will require a "rapid,

yet careful response" to address (Dube, 2018, p. 183). Van der Kolk (2005) has further argued that ACEs may be the most significant threat to public health in the United States.

ACEs and Mental Health. As discussed earlier, Felitti et al. (1998) found correlations between ACEs and a number of negative physical health outcomes. In a further study of the data, Anda et al. (2006) found through logistic regression that ACEs were correlated with mental health outcomes such as depression, anxiety, perceived stress, anger control, aggression, and substance use (Anda et al., 2006). Drawing on the second wave of data from the original ACEs study, Merrick et al. (2017) found a graded dose response relationship between ACEs and suicide attempts along with depression in adulthood. The researchers also noted that household mental illness, emotional abuse, and emotional neglect had the strongest association with depression. In another nationwide study of 3,885 participants in the United Kingdom, researchers found that the higher the ACEs score, the lower the participant's level of mental well-being, which included factors such as clear thinking, having an optimistic outlook, being relaxed, and problem solving abilities (Hughes et al., 2016). Jones et al. (2018) found that ACEs had direct and indirect effects on adult levels of income, social support, other adversity, and adult mental health impairment. In a German sample of 121 adults with a mean age of 23.38, researchers found that lower oxytocin levels, the chemical that helps individuals form secure relationships, was correlated with a higher level of emotional neglect in childhood as well as higher levels of the avoidance of social situations and social fear in adulthood (Müller et al., 2019).

Challenges to the ACEs Study. Although there is a wide empirical base for the effects of ACEs, the concept is not without its challengers. McEwen and Gregerson (2019) argued that the original ACEs classifications failed to recognize sociocultural and generational implications of ACEs and situates itself in a deficit model instead of a more proactive strengths-based model and

as such, should be updated. Likewise Burke Harris and Renschler (2015) have argued for a similar expansion of ACEs classifications and have added a number of additional ACEs to the original 10. These ACEs include community violence, foster care experience, the death of a parent or guardian, bullying, discrimination, and deportation due to illegal immigration status. Cronholm et al. (2015) noted that the original ACEs sample was predominately white and middle-class and did not adequately represent ACEs in diverse urban populations. They developed an expanded ACEs instrument adding a number of the previously discussed concepts including personally experiencing foster care, bullying, racism; living in a dangerous community; and being a witness of violence. The researchers surveyed 1,784 adult residents of Philadelphia using the updated instrument. Using the original criteria, nearly 73% had experienced at least one of the original ACEs, with 63.4% having experienced at least one of the expanded ACEs. Of the sample nearly 14% had only experienced at least one of the expanded categories, which suggests that a number of those experiencing ACEs may go unrecognized if the original tool is not expanded (Cronholm et al., 2015). Finkelhor et al. (2015) created a tool using an ACEs expansion similar to Cronholm et al. (2015), but instead used a sample of 1,949 youth ages 10-17. The researchers found significant correlations between their expanded categories and mental health outcomes further suggesting the need for such an expansion (Finkelhor et al., 2015).

Another widely cited challenge to the original ACE study is the possibility of recall bias, where respondents may not accurately respond to questions about childhood abuse and neglect. Widom and Shepard (1996) found, for example, that 40% of their sample of 110 adults who had documented cases of childhood physical abuse failed to report that abuse 20 years later. Widom and Morris (1997) found a similar underreporting of childhood sexual abuse, with only 16% of

men considering their documented cases of sexual abuse to be abuse in stark contrast to the 64% of women who reported their documented cases as abuse. The researchers suggested that the way adults perceive their childhood experiences may affect later functioning and reporting. More recently, Colman et al. (2016), in a study of 7,466 respondents to Canada's National Population Health Survey, found that 21.5% of respondents who reported no ACEs in initial reporting, reported a new experience a decade later. Similarly, 57% changed from a "yes" to a "no" on the same ACEs when asked again ten years later. Using logistic regression, the researchers found a link between new reporting of ACEs and increased levels of stress and depression, suggesting again the importance of how one appraises the events matters. In a review of empirical studies of recalled reporting, Hardt and Rutter (2004) suggested that ACEs are underreported in later years, and that early positive responses should be believed.

These challenges to the ACEs study and understanding of trauma and its effects help to show the complex nature of ACEs and their effects and support the need for more research on ACEs.

ACEs and Schools. Schools have increasingly recognized the impact that trauma and ACEs may have on students' behavior, academic achievement, and school engagement (Overstreet & Chafouleas, 2016). In 2001, the Substance Abuse and Mental Health Services Administration (SAMHSA; 2014) formed the National Child Traumatic Stress Initiative tasked with stemming the crisis of childhood trauma. Initially, SAMHSA's trauma-informed framework applied to primarily the health care sector. Most children, however, access mental health services in their schools (Farmer et al., 2003). As a result, the most logical place for trauma interventions to take place is within these schools (Plumb et al., 2016). Many districts, therefore, have implemented practices that have been described as trauma-sensitive, trauma-informed, and trauma-responsive

within their schools (Blodgett & Dorado, 2016; Phifer & Hull, 2016). Such programs typically follow SAMHSA's "4Rs" framework which states that practices should realize trauma's widespread impact, recognize the symptoms and signs of trauma of all stakeholders, respond with trauma sensitive practices, and resist re-traumatization (SAMHSA's Concept of Trauma and Guidance for a Trauma-Informed Approach, 2014).

As TSS are a relatively new phenomenon with a scarcity of empirical research available, most of the current studies focus on student outcomes. At the kindergarten level, for example, Jimenez et al., (2016) conducted a secondary data analysis to determine if there is a link between ACEs and kindergarten outcomes. Of the 1,007 respondents, fifty-five percent reported one or more ACEs with 12% reporting three or more with the number of ACEs having a negative correlation with positive academic and behavior outcomes. The researchers also found that even having one of the ACEs showed a higher likelihood of poor teacher-reported outcomes in all of the academic and behavioral domains measured. In another study on the effects of ACEs, Porche et al. (2016) performed a secondary data analysis using the National Survey of Children's Health 2011/12 (NSCH) to determine the relationship between a subset of ACEs and three academic outcomes: school engagement, retention in grade, and individualized education plan (IEP) status along with two covariates —maternal mental health and neighborhood violence. They found a positive correlation between number of ACEs and number of mental health diagnoses, also between mental health diagnoses and likelihood of being retained in school or being put on an IEP. The researchers further noted a negative correlation between number of mental health diagnoses and school engagement.

Some schools are now not only involving educators in understanding how ACEs impact students academically, behaviorally, and emotionally, they are asking educators to evaluate

students' ACEs scores themselves. In a recent study in 10 Northwestern schools, school personnel including teachers, administrators, and counselors were asked to identify the ACEs score of 2,101 elementary students to determine the feasibility of this type of reporting in the future (Blodgett & Lanigan, 2018). The researchers suggested that although the possibility of underreporting exists, such a practice "minimizes burden, potential intrusion, and unintended consequences in families" (p. 142). As Ludick and Figley (2017) noted, traumatic memories are a possible risk factor in STS and compassion fatigue. Having teachers focus on identifying ACEs, therefore, may actually work as a trigger for a teacher's own ACEs history, which may, as previously discussed, put them at a higher risk for costs to caring.

Empathy

As discussed earlier, a practitioner's empathy has been described as both a risk and a protective factor for STS (Salston & Figley, 2003). Figley and Ludick (2017) have argued that "only compassionate, empathic, loving and caring people suffer from [compassion fatigue] — the very people who are so vital to the mental health field" (Figley & Ludick, 2017, p. 579).

In general, empathizing with others' positive emotions has been found to increase the empathizers' pro-social behaviors (such as kind acts); empathizing with another's negative emotions has not, however, which suggests the type of emotions empathized with may have an impact on emotional outcomes (Andreychik & Migliaccio, 2015). Lamothe et al. (2014) found that cognitive empathy, a form of empathy that includes perspective taking, protected against burnout, but affective empathy, a form of empathy that includes sympathy, does not. Sympathy can be defined as " an emotional reaction of pity toward the misfortune of another, especially those who are perceived as suffering unfairly" (Sinclair et al., 2017, p. 438).

In education, Rogers (1980) has argued that "a high degree of empathy in a relationship is possibly the most potent factor in bringing about change and learning" (p. 139). Meyers et al. (2019) has argued that a teacher's empathy may increase student learning, but a teacher's sympathy may lead to a decrease in student academic and behavioral expectations. Teacher empathy, specifically, can be defined as "the degree to which instructors work to deeply understand students' personal and social situations, feel caring and concern in response to students' positive and negative emotions, and communicate their understanding and caring to students through their behavior" (Meyers et al., 2019, p.161). Barr (2011), however, found no correlation between empathy and teacher-student relations. Wróbel (2013) found that teacher empathy may actually lead to emotional exhaustion, a factor of burnout, and suggested the importance of teachers learning emotional regulation to buffer such a reaction.

Resilience

Resilience can be defined as the ability to bounce back from adverse experiences with limited negative outcomes. Wagnild (2014) further described resilience as "the capacity each of us has for growth and positive adaptation in spite of the constant barrage of stress we all feel on a daily basis" (Introduction, para. 5).

O'Dougherty Wright et al. (2013) has identified four phases in resilience research which began in the 1970s: 1) the identification of personal protective factors, 2) the understanding of resilience in ecological perspectives, 3) the development of interventions to foster resilience, 4) the understanding of multiple levels of analysis of resilience including epigenetic and neurobiological factors. While the earliest resilience researchers viewed resilient individuals as "invulnerable" (O'Dougherty Wright et al., 2013, p.16), later researchers came to understand

resilience as a complex construct consisting of a number of protective factors and processes. According to early resilience researcher (Rutter, 1987):

> Protection does not reside in the psychological chemistry of the moment but in the ways in which people deal with life changes and in what they do about their stressful or disadvantageous circumstances. Particular attention needs to be paid to the mechanisms operating at key turning points in people's lives when a risk trajectory may be redirected onto a more adaptive path. (p.329)

Masten (2001) has further argued that contrary to the extraordinary case studies underlying much of resilience research, resilience is a "common phenomenon arising from ordinary human adaptive processes" (p. 234).

In a review of a number of cross-cultural longitudinal studies on resilience, various individual and group attributes were found to aid in resilience into adulthood including impulse control, intelligence levels, self-esteem, a sense of autonomy, a sociable nature, and having had supportive connections such as teachers and mentors (Werner, 2013). Prince-Embury and Courville (2008) described a three-factor construct of resilience including personal factors such as optimism, self-efficacy, and adaptability and sense of relatedness as a useful model for understanding resilience. Wagnild (2013) suggested that there is a five-factor "resilience core" (p. 152) consisting of purpose, equanimity, self-reliance, perseverance, and existential aloneness.

Specific to education, Knight (2007) described a three-factor framework for resilience: emotional competence, social competence, and futures oriented (p. 547). She also suggested that not only should teachers play a role in helping their students develop resilience, teachers should focus on their personal resilience as well. Beltman et al. (2011) found teacher resilience to be "a complex, idiosyncratic and cyclical construct, involving dynamic processes of interaction over

time between person and environment" (p. 195). The researchers further found high self-efficacy and altruism to be the most important personal factors related to teacher resilience. Gu (2014) argued that teacher resilience is more complex than merely bouncing back from adversity, and found that teacher-teacher, teacher-administrator, teacher-student relationships strongly influence teacher resilience. More recently, Ainsworth and Oldfield (2019) found that contextual factors such as school climate, administrative support, and workload were just as important as personal protective factors of teacher resilience development.

School Climate

School climate can be defined as "the extent to which a school community creates and maintains a safe school campus; a supportive academic, disciplinary, and physical environment; and respectful, trusting, and caring relationships throughout the school community" (U.S. Department of Education, 2014). Further, the National School Climate Center (2007) noted:

> A sustainable, positive school climate fosters youth development and learning necessary for a productive, contributive, and satisfying life in a democratic society. This climate includes norms, values, and expectations that support people feeling socially, emotionally and physically safe. People are engaged and respected. Students, families and educators work together to develop, live, and contribute to a shared school vision. Educators model and nurture an attitude that emphasizes the benefits of, and satisfaction from, learning. Each person contributes to the operations of the school as well as the care of the physical environment. (p. 5)

For students, positive school climate has been shown to have many impacts including increased academic success, increased engagement, increased school connectedness, increased physical and emotional health, higher graduation rates, and decreased substance use (La Salle, 2018;

Thapa et al., 2013). For teachers, positive school climate has shown an inverse correlation with burnout (Grayson & Alvarez, 2008) and a positive correlation with teacher retention (Thapa et al., 2013).

Compassion Satisfaction

The final factor to be discussed in this section is compassion satisfaction. Compassion fatigue, as previously discussed, can be understood as exhaustion resulting from caring from others. At its opposite, then, is compassion satisfaction or a sense of fulfilment from caring and helping others. For teachers, compassion satisfaction can be defined as being satisfied not only with one's work, but also with the acts of helping and teaching others; compassion satisfaction originates, in part, from teachers feeling happy, successful, and as though they make a difference in their jobs (Stamm, 2010).

Conrad and Kellar-Guenther (2006) found that higher levels of compassion satisfaction were linked with lower levels of compassion fatigue and burnout in child protective workers. In a study of mental health care professionals, Ray et al. (2013) found that higher levels of compassion satisfaction were positively correlated with positive work life conditions (e.g. values, community, workload, control, reward, fairness), and inversely correlated with burnout.
In education, Borntrager et al. (2012) found slightly higher compassion satisfaction levels than expected in their sample, but no further analysis was completed with the concept. In fact, a search of the literature found no current published studies in education that focus on compassion satisfaction and teachers. Regardless, emotional exhaustion, a factor of burnout, has been found to be negatively correlated with job satisfaction an element of compassion satisfaction (Skaalvik & Skaalvik, 2011). Further, Eldor and Shoshani (2016) found that compassion, another element

of compassion satisfaction, may mitigate the effects of burnout and increase the level of teachers' engagement.

Summary

To summarize this review of the literature, practitioners who work with traumatized individuals are at risk to a number of costs to caring including vicarious traumatization, STS, compassion fatigue, and burnout (Figley, 1995; McCann & Pearlman, 1990; Stamm, 2009). The literature base on the prevalence of costs to caring in education is scarce, however, with only one known published study focusing specifically on trauma, costs to caring, and teachers (Borntrager et al., 2012; Caringi et al., 2015; Koenig et al., 2018). The CFRM was designed to give practitioners who work with those who have been traumatized and traumatic materials a tool to help them develop compassion fatigue resilience (Ludick & Figley, 2017). The CFRM was not designed for teachers, so a unique Teacher Cost to Caring Resilience Model (TCCRM) is warranted. There is some evidence to show that a number of risk and protective factors are related to teachers' costs to caring. These factors include their personal history of trauma and ACEs (Baird & Kracen, 2006; Hensel et al., 2015), their current caseload and exposure to students who have experienced ACEs, empathy (Barr, 2011; Meyers et al., 2019; Wróbel, 2013), school climate (Grayson & Alvarez, 2008; La Salle, 2018; Thapa et al., 2013), resilience (Ainsworth & Oldfield, 2019; Beltman et al., 2011; Gu, 2014; Knight, 2007), and compassion satisfaction. The aforementioned factors will be used in the current study's TCCRM.

CHAPTER THREE

METHODS

Overview

The purpose of this quantitative study, as previously stated, was two-fold. First, to understand the prevalence and scope of the extent to which Maine teachers experience costs to caring. Next, to test a conceptual TCCRM using SEM. This model identifies potential personal and organizational mediating factors that contribute to the extent to which Maine teachers experience costs to caring. The research questions that guided this study were the following:

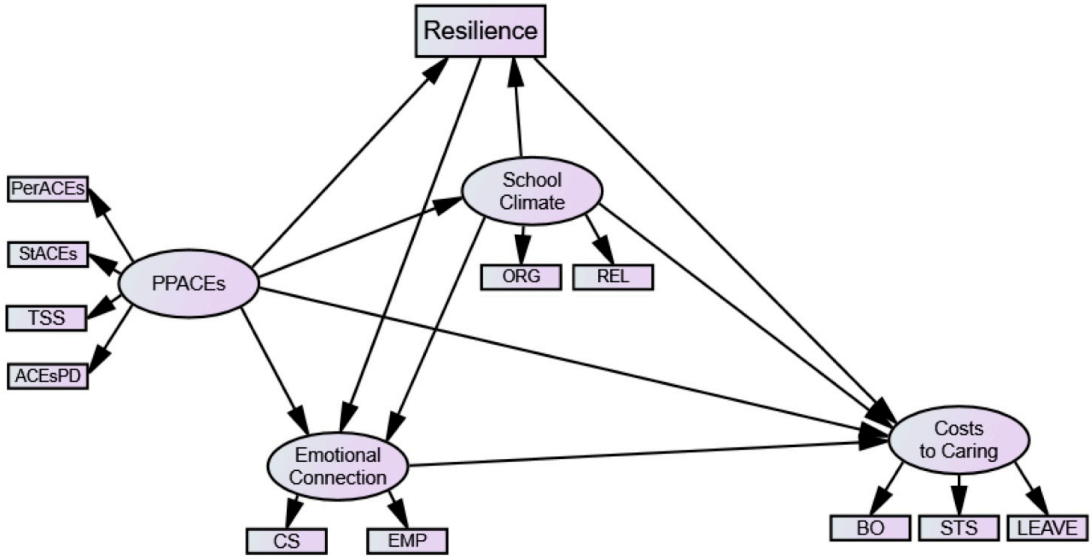
1. What is the extent to which Maine teachers experience costs to caring?
2. How are these costs to caring related to Maine teachers' personal and professional ACEs exposure?
3. What personal and organizational mediating factors contribute to the extent to which Maine teachers are currently experiencing costs to caring?

The theoretical and conceptual models as shown in Figures 1.1 and 1.2 and further explained in Chapter Two provided the framework for the hypothesized structural model (see Figure 3.1) of the TCCRM to be tested. In SEM, latent variables are formed from measured variables in order to more closely reflect theorized constructs (Keith, 2015). In the model, rectangles signify measured variables, ovals represent latent variables, curved arrows represent correlations, and direct arrows represent causal paths. I theorized that teachers' personal ACEs history, their exposure to students whom they perceived have experienced ACEs, their professional development in ACEs, and whether or not they worked in TSS created a latent variable which I have termed "PPACEs." This variable reflects risk to the costs to caring that teachers face from their personal and professional ACEs exposure. I further theorized that compassion satisfaction

and empathy formed a latent variable, which I termed “emotional connection” meaning an emotional connection to others as well as one’s job. The latent variable of costs to caring was formed by combining burnout, STS, and intent to leave. The school climate latent variable was created using the two measured variables of school organizational supports and relational supports as defined by You et al. (2014) and further described in a later section. The measured variable of resilience, I theorized, stood alone as a variable impacting teachers’ costs to caring. The directional arrows in Figure 3.1 show how I hypothesized each of the variables impacted one another. For example, PPACEs impacted costs to caring both directly and indirectly through resilience, school climate, and emotional connection.

Figure 3.1

Hypothesized Structural Model for Teacher Costs to Caring Resilience Model



Note. PerACEs = teachers' personal ACEs score; StACEs = caseload of students with ACEs; TSS = consider current school to be trauma sensitive school; ACEs PD = ACEs professional development; PPACEs = personal and professional ACEs of teachers; ORG = organizational support; REL = relational support; CS = compassion satisfaction; EMP = empathy, BO = burnout; STS = secondary traumatic stress; LEAVE = intent to leave.

Sample and Sampling Procedures

The sample was taken from current members of the Maine Education Association (MEA), the state-level chapter of the National Education Association. At the time of the study, the MEA membership consisted of approximately 18,840 members, including both active and retired educators. Of that membership there were 11,944 active PreK-12 teachers, with a gender

breakdown of 8,972 or 75.11% females, 2,528 or 21.17% males, and 444 or 3.72% with no identified gender (G. Leavitt, personal communication, January 12, 2020). In comparison, the Maine Department of Education (MDOE) reported 16,958 active teachers in the State of Maine; 12,764 or 75.3% identified as female, and 4,193 or 24.83% identified as male (M. Piatt, personal communication, May 12, 2020). A total of 683 people responded to the survey (3.6% of the total MEA population), of which 558 (4.7% of the active PreK-12 MEA population) indicated that they were currently PreK-12 teachers in the State of Maine. Of that 558, 16 respondents (2.9% of 558) answered demographic questions and only partially answered survey questions. Those respondents were dropped from final analyses leaving a total *N* of 542 for this study.

The mean age of respondents was 50.3 years (n = 518), the mean years of experience in education was 22.0 years (n = 535), and the mean years having worked at their current school was 14.3 years (n = 534). In comparison the MDOE reported a mean age of 45.86 years (N = 16,957) and a mean of 14.34 years (N=16,957) of experience (M. Piatt, personal communication, May 12, 2020).

Table 3.1 summarizes the distribution of gender, ethnicity, and teaching roles of the current study. A chi-square goodness-of-fit test was conducted to determine whether respondents in the study held teaching roles in similar proportions to the population of teachers in the State of Maine. The minimum expected frequency was 5.4. The chi-square goodness-of-fit test indicated that the teaching roles were not similarly distributed in the respondents compared to the population ($X^2(5) = 48.865$, $p < .001$).

Table 3.1

Sociodemographic Characteristics of Respondents

	Characteristics	n	Study %	Population %
Gender [a]	Female	444	81.9	75.1
	Male	98	17.7	21.2
	Gender non-binary	2	.4	
	Total	542		
Ethnicity [b]	Black/African American	1	.2	
	Hispanic/Latinx	3	.6	
	Asian	2	.4	
	White	519	95.8	
	Two or More	6	1.1	
	Prefer Not to Answer	11	2.0	
	Total	542	100	
Role [c]	Classroom teacher	396	73.1	81.5
	Special Education Teacher	90	16.6	13.3
	English Language Learner Teacher	8	1.5	1.2
	Gifted and Talented (GT) Teacher	11	2.0	1.2
	Literacy Specialist	19	3.5	1.0
	Title I Teacher	12	2.2	1.5
	Long term substitute	0	0	0.3
	Total	536		

Note. N=542.

[a] Gender population data provided by the MEA (G. Leavitt, personal communication, January 12, 2020).

[b] Population ethnicity data was not available.

[c] Role population data provided by the MDOE (M. Piatt, personal communication, May 12, 2020).

Table 3.2 indicates the number of respondents from each of Maine's sixteen counties. A chi-square goodness-of-fit test was conducted to determine whether respondents were located in

Maine counties in similar proportions to the teaching population according to the MDOE. The minimum expected frequency was 4.9 with 1 cell (6.3%) having an expected frequency less than 5. The chi-square goodness-of-fit test indicated that the county location was not similarly distributed in the respondents compared to the population ($X^2(15) = 72.453$, $p < .001$).

Table 3.2

Breakdown of Location of Respondent Schools

Location		*n*	Study %	Population %
Maine County	Androscoggin	28	5.2	8.6
	Aroostook	38	7.0	4.9
	Cumberland	112	20.7	21.8
	Franklin	17	3.1	1.9
	Hancock	17	3.1	4.5
	Kennebec	76	14.1	8.1
	Knox	14	2.6	3.8
	Lincoln	9	1.7	2.6
	Oxford	26	4.8	5.2
	Penobscot	69	12.8	11.3
	Piscataquis	9	1.7	.9
	Sagadahoc	15	2.8	2.5
	Somerset	33	6.1	4.1
	Waldo	16	3.0	2.1
	Washington	13	2.4	2.8
	York	48	8.9	14.9
	Total	540		100.0

Note. Population data provided by the Maine Department of Education (M. Piatt, personal communication, May 12, 2020).

Data Collection Procedure

The Maine Teacher Resilience Survey, located in Appendix A, was created in Qualtrics and distributed via email by the president of the MEA in February and March of 2020. The survey and a cover letter were emailed to the current MEA membership on February 12, 2020. A reminder email was sent out on February 26, 2020 followed up by a final reminder in the monthly "President's Message" on March 2, 2020 (see Appendix B). The survey was closed to participants the morning of March 14, 2020 with only one participant responding between March 12 and March 14, 2020. In most circumstances, the date of distribution would be of little import. Due to the nature of the survey, however, the dates are relevant as many schools began to move to online or distance learning due to the COVID-19 pandemic on or after March 13, 2020.

Survey Design

The Maine Teacher Resilience Survey consisted of researcher-created questions and a number of validated and reliable measures described below. Further, a codebook which explains how each section of the survey was measured is located in Appendix C.

Demographic Questions

The first section of the survey included a researcher-created section of demographic questions on the following topics: age, gender, total years in education, name of current school, years at current school, county in which the school is located in, and the current teaching role in school.

Trauma Sensitive School Practices

Two researcher-created questions ascertained the training that respondents have received on ACEs as well as whether or not they consider their current school to be a trauma sensitive school. The questions used are as follows: "Have you received any training or professional

development on Adverse Child Experiences over the past year?" and "Do you consider your school to be trauma-sensitive, trauma-informed, or trauma-responsive?" Respondents answered 0 for "Not sure," 1 for "No," and 2 for "Yes."

Perceived Caseload of Students with ACEs

To measure the teacher caseload of students who have experienced ACEs one researcher-created question asked, "Percentage of your current students that you believe have experienced Adverse Childhood Experiences: e.g., physical, emotional, sexual abuse; physical or emotional neglect; missing caregiver due to death, divorce, military duty, or incarceration; living with a substance abuser; witnessing domestic violence; living with someone who has an undiagnosed mental illness." Answers were reported in percentages which ranged from 0 to 100. If a range was specified by a respondent (n = 10), the number constituting the mid-range was substituted for the former (e.g. 10-15% was changed to 12.5%). Also, a substitution of 51% was made if a respondent indicated "more than half" or "most" students had experienced ACEs (n = 5). Finally, if a respondent indicated the total was "less than" a number, .5 was subtracted and the resulting number was substituted (e.g. "less than 10" = 9.5; n = 2).

Brief-California School Climate Survey (B-CSCS)

To measure school climate, the B-CSCS was used. The B-CSCS, a 15-question Likert-type measure, is a shortened form of the California School Climate Survey. The B-CSCS measures two latent factors considered core aspects of school climate: organizational supports and relational supports (You et al., 2014). The first factor, organizational supports, includes seven items with statements such as "School is a supportive and inviting place for students to learn," "School promotes academic success for all students," and "School is a supportive and

inviting place for staff to work." The second factor, relational supports, includes statements such as "Adults really care about all students" and "Adults support and treat each other with respect."

According to You et al. (2014), the B-CSCS has good internal consistency with Cronbach alpha coefficients of organizational supports reported for primary school, middle school, and high school teachers at .85, .87, and .85 respectively. The researchers also reported Cronbach alpha coefficients of relational supports reported for primary school, middle school, and high school teachers at .91, .92, and .91 respectively. In the current study, the Cronbach alpha coefficient for organizational supports was .83 and for relational supports was .89. Table D.1 in Appendix D shows the internal consistency of the scale.

Adverse Childhood Experiences (ACE) Inventory — Revised

To measure the personal ACEs history of teachers, *The ACE Inventory — Revised* (Finkelhor et al., 2015) was used. The original ACEs inventory developed by Felitti et al., (1998) consisted of 10 different ACEs: emotional abuse, physical abuse, sexual assault, emotional neglect, physical neglect, violence against mother, household substance abuse, household mental illness, parental divorce or separation, and household member incarceration. Finkelhor et al. (2013) suggested that the original inventory was too narrow, and that other ACEs should be added to improve the model. McEwen and Gregerson (2019) noted that the original ACEs questionnaire did not take into account factors such as social inequality and community violence.

The ACEs questions used in the current study included all the original ACEs along with four additional categories: low socioeconomic status (SES), peer victimization, peer rejection and/or isolation, and community violence exposure (Finkelhor et al., 2015). Finkelhor et al. reported that the additional factors improved model fit and significantly predicted either health

status or pscyhological distress, suggesting different pathways to later outcomes. In the current study all 542 respondents answered ACEs related questions.

Professional Quality of Life Scale (ProQOL)

To measure compassion satisfaction, STS and burnout the ProQOL was used (Stamm, 2010). The ProQOL is a 30-question Likert-type measure that seeks to evaluate the quality of life experienced by those in helping professions. According to Stamm (2010), professional quality of life includes a positive factor (compassion satisfaction) and a negative factor (compassion fatigue). Compassion satisfaction relates to the positive feelings one derives from effectively helping others at work and is measured by 10 items. Compassion fatigue consists of two measurable factors each measured by 10 items on the ProQOL: burnout, defined as negative feelings associated with work such as exhaustion, hopelessness, and frustration, and STS defined as the effects of work-related exposure to those affected by trauma.

The ProQOL has been administered in at least 200 published studies, with compassion satisfaction scale, the burnout scale, and STS scale reported having Cronbach alpha reliability scale scores of .88, .75, and .81 respectively (Stamm, 2010). In the current study, the Cronbach alpha for compassion satisfaction was .91, for burnout the alpha was .83, and for STS the alpha was .80. Appendix E shows the internal consistency for each of the variables on the scale.

The Connor-Davidson Resilience Scale 10 (CD-RISC-10)

To measure resilience, the CD-RISC-10, a shortened version of the original Connor-Davidson Resilience Scale (CD-RISC) developed by Connor and Davidson (2003), was used. Campbell-Sills and Stein (2007) developed the CD-RISC-10 after determining that 25 question CD-RISC factor structure was unstable. The researchers formulated a 2-factor structure of hardiness (the ability to cope with change through adverse events) and persistence (the ability to

provide high effort through adverse conditions). The 10 question Likert-type measure which showed strong internal consistency ($\alpha = .85$). The researchers further found that the CD-RISC-10 showed a relationship between childhood maltreatment and current psychiatric symptoms in over 500 college students (Campbell-Sills & Stein, 2007). In the current study, the Cronbach alpha was .87. Appendix F shows the internal consistency of the scale.

The General Empathy Scale

To measure empathy, the General Empathy Scale, a 7-item Likert-type scale developed by Andreychik and Migliaccio (2015), was used. The researchers designed the scale as a measure of the "general capacity to connect with the emotions of others" (p. 278). Two items were taken from The Toronto Empathy Questionnaire developed by Spreng et al. (2009) and five items were taken from the Multi-Dimensional Emotional Empathy Scale developed by Mayer et al. (1999). Both of the aforementioned measures have been shown to have strong reliability and validity. The current scale included statements such as "I find that I am 'in tune' with other people's moods," "I always try to tune it to the feelings of those around me," and "I feel deeply for others." Three reverse-coded statements were also included in the scale: "I am not really interested in how other people feel," I don't give others' feelings much thought," and "My feelings are my own and don't reflect how others feel." Andreychik and Migliaccio (2015) reported a Cronbach alpha of .86 in their 7-question measure.

In the current study, the 7-question version of the scale had a Cronbach alpha of .67. To improve reliability, two questions were removed, (i.e., "My feelings are my own and don't reflect how others feel" and "It's easy for me to get carried away by other people's own emotions") resulting in a five-question measure. Appendix G shows the internal consistency of the 7-question measure (see Table G.1) and the resulting 5-question measure (see Table G.2).

The Cronbach alpha for the latter measure was .73 with an inter-item correlation range of .241 to .476.

Intent to Leave

The four questions used as a measure of a teacher's intent to leave were modified from an intent to leave scale created by Hohman et al. (2013). The original questions were measured on a 7-point Likert sale ranging from 1 = *strongly disagree* to 7 = *strongly agree* and consisted of the following: "I have considered leaving the CSU system," "I have considered leaving academia altogether," "I would leave this position for another job," and "I am searching for a different full-time job" (Hohman et al., 2013, p. 752). The scale showed high internal consistency with a Cronbach alpha of .84. For the purposes of the current study, the questions were changed to "I have considered leaving this school," I have considered leaving education altogether," "I would leave this position for another job," and "I am searching for a different full-time job." In the current study, the Cronbach alpha was .86. Appendix H shows the internal consistency of the measure.

Open-Ended Question

The final researcher-created question (i.e., "Your voice is so important in helping us to understand the experiences that teachers have in today's school. Please use the following space to share any thoughts, comments, or resources that you have on the topic of educator resilience in the State of Maine") allowed participants to share any thoughts and concerns after they have filled out the survey. While this question's qualitative nature will not be analyzed for the current study, the information gathered will be used to inform future research.

Methods for Data Analyses

Data for the survey was collected using the online Qualtrics survey platform provided through the University of Maine system. Data were analyzed using the Statistical Package for the Social Sciences 26.0 (SPSS) and Analysis of a Moment Structures 26.0 (AMOS). The following sections describe the specific analytic techniques used throughout the study.

Sociodemographic Analyses

Descriptive statistics used for sociodemographic information (i.e. age, gender, total years in education, name of current school, years at current school, county in which the school is located, and the current teaching role in school) were obtained using SPSS.

Instrument Analyses

Internal consistency for the B-CSCS, the ProQOL, the CD-RISC-10, the Intent to Leave, and the General Empathy scales were conducted using SPSS. Two teacher personal ACEs variables were created: one for all of the 14-question measure described in Chapter Four as expanded ACEs and one for a subset of the measure that reflected the original ACEs categories as defined by Felitti et al. (1998). The latter variable is described as traditional ACEs throughout the remainder of this study.

Costs to Caring and Personal and Professional ACEs Analyses

To analyze the extent to which respondents experienced costs to caring, I first compiled descriptive statistics (e.g., frequencies, mean, median, range, percentiles) of each of the three variables (i.e., burnout, STS, intent to leave). I also created frequency charts for all of the personal and professional ACEs variables. To begin to understand how personal and professional ACEs impact teachers' costs to caring, Pearson product-moment correlations were conducted for eight measured variables. As shown in Figure 3.1 the variables of ACEsPD, StACEs, TSS, BO,

STS, and LEAVE were included in these correlations. PerACEs was separated into two variables: expanded ACEs (ExpACEs), which included all 14 of the ACEs indicators as defined by Finkelhor et al. (2015), and traditional ACEs (TradACEs), which included the original 10 ACEs indicators as defined by Felitti et al. (1998). The latter variables were looked at separately as the literature base on traditional ACEs is much more robust, and I wanted to determine if there were differences between the two ways of measurement and how they each impacted costs to caring.

Teacher Costs to Caring Resilience Model Formation

For the final stage of analysis, I tested the hypothesized structural model of the TCCRM (see Figure 3.1) using SEM in AMOS. Not only does SEM allow one to conduct causal modeling, according to Byrne (2016), the structural model of SEM "can be modeled pictorially to enable a clearer conceptualization of the theory under study" (p. 3). SEM analysis consists of two stages of analysis resulting in two sub-models: a measurement model and a structural model (Byrne, 2016). The measurement model confirms that the measured variables link together to form the latent variables previously discussed, and the structural model defines the relationships amongst all of the variables. I completed two measurement models and one structural model to create a final TCCRM.

Summary

The goal of this chapter was to outline the methods used to answer research questions for this study. A hypothesized structural model of the TCCRM was provided based on the theoretical CFRM framework of Ludick and Figley (2017). Sampling procedures were discussed, and the specific sample of this study was described. The chapter then outlined the specific data collection procedures and explained the survey design. All of the instruments

included in the survey were discussed and reliability data for each was provided. The methods for data analyses were then described. This description included descriptive and inferential statistical methods performed in SPSS, and SEM performed using AMOS. The chapter concluded with a description of how the final TCCRM was created. Chapter Four will provide the results of the descriptive and inferential analyses, as well as the results of the SEM analyses.

CHAPTER 4

RESULTS

This chapter presents the results of the data analyses described in Chapter Three. The first section of the chapter outlines the extent to which Maine teachers experience costs to caring. The chapter then describes the prevalence of Maine teachers' personal and professional ACEs exposure, and then explains the findings of how costs to caring are related to this exposure. The final sections of the chapter show the results of the SEM analyses used to create a TCCRM, which identifies personal and organizational mediating factors that contribute to the extent to which Maine teachers are currently experiencing costs to caring. Two measurement models and one structural model are presented, resulting in a final structural TCCRM. The direct, indirect, and total effects of variables are presented as further support for the model.

Maine Teachers and Costs to Caring

There are three measured variables that I used to assess the extent to which Maine teachers experience costs to caring: STS, burnout (BO), and intent to leave (LEAVE). I measured STS and BO using the ProQOL scale. According to Stamm (2010), for both STS and BO, approximately 25% of people score below 43 and 25% of people score above 57 on the measure, which corresponds to a low incidence and a high incidence of each respectively. The scores are standardized *t* scores, where each have a mean of 50, a standard deviation of 10, and median of 49. The mode of BO is listed in the manual as 51 and the mode of STS is listed at 49 (Stamm, 2010). Table 4.1 shows the descriptive statistics obtained from the sample for BO (n = 539) and STS (n = 541). Findings suggest that this sample of Maine teachers were neither more nor less burned out than what is to be expected in other professions. Likewise, for STS, the 25%

percentile was similar to stated norms, however the 75th percentile was 1.12 points lower, which suggests that the sample showed slightly lower STS than expected.

Table 4.1

Summary of Preliminary Descriptive Analysis of Burnout and STS

				Percentiles	
Variable	*n*	Median	Range	25	50	75
Burnout	539	50.13	25.85-79.63	43.19	50.13	57.07
Secondary Traumatic Stress	541	48.88	29.81-83.91	43.62	48.88	55.88

Note. *N* = 542.

The third variable, LEAVE, was measured using four adapted questions from Hohman et al. (2013). The distribution for the current study's sample of K-12 teachers (n = 539, M =14.53, SD = 6.95, and range = 4–28) is very similar to what Hohman et al. found with university faculty in California.

To further understand the sample's intent to leave, I compiled a frequency table (see Table 4.2) for each of the indicators on the scale. As shown, even though slightly over one-third of respondents have considered leaving their school or their profession, this is balanced by almost identical percentages of respondents disagreeing or strongly disagreeing with those statements. Further, fewer than one quarter answered that they would leave their position for other work, and only 8.9% responded that they are actively searching for another job. This

suggests that while respondents have thought about leaving their profession, at the time of the survey, a smaller percentage were actively searching for other work.

Table 4.2

Intent to Leave Individual Indicator Results

Indicator	*n*	*M*	*SD*	Median	Disagree/ Strongly Disagree	Agree/ Strongly Agree
I have considered leaving this school.	542	4.11	2.22	5.00	35.2%	35.9%
I have considered leaving education altogether.	541	4.10	2.24	5.00	35.9%	35.2%
I would leave this position for another job.	540	3.82	1.96	4.00	33.4%	23.0%
I am searching for a different fulltime job.	539	2.52	1.80	2.00	67.7%	8.9%

Note. *N* = 542. Scores were calculated using a 7-point scale: 1 = Strongly disagree, 2= Disagree, 3 = Somewhat disagree, 4 = Neither agree nor disagree, 5 = Somewhat agree, 6 = Agree, and 7 = Strongly agree.

Personal and Professional ACEs and Costs to Caring

Next, I used both descriptive and inferential statistics to determine the extent to which teachers experienced ACEs both personally and professionally, and further, how those factors impacted their costs to caring.

To determine respondents' personal ACEs exposure, the 14-item ACE-Inventory—Revised (Finkelhor et al., 2015) was used. As discussed in Chapter Three, two version of ACEs measures were used in preliminary analysis to determine teachers' personal ACEs exposure

(PerACEs): TradACEs (n = 542, M = 1.66, SD = 2.01, range 0 – 10.0) as defined by Anda et al. (2006) and ExpACEs (n = 542, M = 2.34, SD = 2.72, range 0 – 14.0) as defined by Finkelhor et al. (2015). Frequency data was compiled for both measures (see Appendix I). For TradACEs, 59% of respondents reported having one or more ACEs, with 18% reported having experienced 4 or more. Results show a lower prevalence of TradACEs in the sample than the original ACEs study which showed a prevalence of 63.9% (Anda et al., 2006), McLaughlin et al. (2013) with a 61.8% prevalence, and Merrick et al. (2019) with a 61% prevalence. Results show a slightly lower prevalence of ACEs than would be expected in the general population. ExpACEs showed that 64.2% of respondents reported having one or more ACEs, with 19.5% reported having experienced 5 or more. The latter percentage approaching twice as high as the Finkelhor et al. study of 11.8%, which consisted of a sample of children and adolescents between the ages of 10-17 (n = 1,949). The adult sample of the present study had their entire childhoods to respond to, which would logically lead to a higher ACEs response.

Three survey questions were related to respondents' professional ACEs exposure. The first two questions were related to school practices: "Have you received any training or professional development on Adverse Childhood Experiences over the past year?" (ACEsPD) and "Do you consider your school to be trauma-sensitive, trauma-informed, or trauma responsive?" (TSS). For both of these questions, respondents could answer "yes," "no," or "not sure." Tables 4.3 shows the frequencies and percentages of teachers who have received training in ACEs over the past year and whether they consider their schools to be TSS. As shown, 67.7% of teachers said that they have received such training over the past year. Similarly, 61.3% of the respondents consider their current schools to be TSS. Notably, however, 22.1% of respondents

were not sure whether or not they consider their schools to fit into the description, and 16.6% responded that their schools were not trauma sensitive.

Table 4.3

Frequencies of ACEs Professional Development and Trauma-Sensitive School

Variable	Answer	Frequency	Valid Percent
ACEs Professional Development	Not sure	15	2.8
	No	160	29.6
	Yes	366	67.7
	n	541	100.0
Trauma-Sensitive School	Not sure	120	22.1
	No	90	16.6
	Yes	332	61.3
	n	542	100.0

One indicator was used to determine the teachers' caseload of students who have experienced ACEs: "Percentage of your current students that you believe have experienced Adverse Childhood Experiences (e.g., physical, emotional, sexual abuse; physical or emotional neglect; missing caregiver due to death, divorce, military duty, or incarceration; living with a substance abuser; witnessing domestic violence; living with someone who has an undiagnosed mental illness)" (n = 515, M = 48.072, SD = 27.29). Frequency data (Appendix J) showed that 54.7% of respondents reported that 50% or more of their students had experienced ACEs, with only 0.4% reporting none of their students had experienced ACEs. Nearly 5% of respondents answered that 100% of their students had experienced ACEs. It should be noted, however, that

27 respondents, 5% of the total sample, did not provide a percentage on this indicator. A number of respondents left the question blank, with two writing in that they did not know.

Next, as a preliminary step to determine how the aforementioned factors impact costs to caring, Pearson product-moment correlations were computed. Results of this study showed that even though both higher TradACEs and ExpACEs were positively correlated with all of the costs to caring variables, ExpACEs showed slightly stronger, albeit small, correlations with all three of the variables. STS showed the strongest of the three, r (541) = .277, $p < .001$, followed by BO, r (539) = .195, $p < .001$, and LEAVE, r (539) = .191, $p < .001$. TradACEs also showed positive correlations with STS, r (541) = .246, $p < .001$; BO, r (539) = .168, $p < .001$; and LEAVE, r (539) = .157, $p < .001$. Due to these findings, I determined that ExpACEs assessed risk more accurately, and therefore should be used as the PerACEs variable in the subsequent SEM analyses.

In terms of professional ACEs exposure, three variables were examined: ACEsPD, TSS, and StACEs. Although the ACEsPD negatively correlated with both BO, r(538) = -.093 and LEAVE, r(538) = -.085 and showed statistical significance ($p < .05$), the correlations were too slight to even be considered small (Laerd Statistics, 2020). TSS showed a small negative correlation with BO, r (539) = -.173, $p < .001$. Finally, StACEs showed small positive correlations with all three costs to caring. The strongest of the three was STS, r (514) = .234, $p < .001$. This was followed by LEAVE, r (512) = .144, $p = .001$; and BO, r (512) = .117, $p = .008$.

Teacher Costs to Caring Resilience Model

Finally, to determine the mediating factors that contribute to the teachers' costs to caring, I performed a SEM analysis with the IBM SPSS AMOS 26 statistical package. As discussed in Chapter Three, SEM analysis consists of two stages resulting in two sub-models: a measurement model and a structural model (Byrne, 2016). The measurement model serves as a confirmatory factor analysis (CFA) to confirm that the measured variables link together to form the latent variables. The subsequent structural model defines the relationships amongst all of the variables (Schreiber et al., 2006). To determine measured and latent variables for the model, I used the hypothesized structural model for the TCCRM (see Figure 3.1) based on the theoretical CFRM (Ludick & Figley, 2017).

In SEM, the stronger the correlation amongst measured variables, the more likely that they are working together in a latent construct (Byrne, 2016). I had originally hypothesized that PerACEs, StACEs, ACEsPD, and TSS formed a latent construct of personal and professional ACEs (PPACEs). I also hypothesized that STS, BO, and LEAVE formed a latent "Costs to Caring" variable. As previously discussed, the measured variables were not correlated strongly enough to form that variable. In fact, only PerACEs and StACEs were significantly correlated with all three of the costs to caring variables. The other two measured variables, therefore, were not included in the model. PerACEs and StACEs were included as separate measured variables instead of the hypothesized latent variable PPACEs.

Pearson product-moment correlations were then conducted for all measured variables to be used in the model (see Table 4.4). As hypothesized, organizational supports (ORG) and relational supports (REL) showed a strong correlation, $r(539)=.574$, and as such were included in the model forming the latent variable "School Climate." Empathy (EMP) and compassion

satisfaction (CS), however, were not sufficiently correlated to warrant a latent construct, $r(542) = .264$. Instead, CS and resilience (RES) showed a moderate positive correlation $r(540) = .441$, which suggested the possibility of these two measured variables formed a latent construct. These two variables were combined in the initial measurement model as teacher protective factors. Schreiber et al. (2006) noted that latent constructs in SEM must not only make statistical sense, they also must make theoretical sense. Stamm (2010) partially defines compassion satisfaction as the pleasure and meaning derived from work, protective factors which some researchers align closely with resilience (Southwick & Charney, 2018). The measured variables of CS and RES, then, are theoretically linked and could be considered part of one latent construct.

Table 4.4

Pearson Product-Moment Correlations for Measured Variables

Variable	Per ACEs	StACEs	EMP	RES	CS	ORG	REL	STS	BO	LEAVE
PerACEs	1	.229***	-.023	-.138***	-.083	-.125***	-.128**	.277***	.195***	.191***
StACEs	.213***	1	.068	-.010	-.062	-.156***	-.150**	.234***	.117**	.144**
EMP	-.021	.068	1	.149**	.264***	.192***	.162***	.144**	-.160***	-.127**
RES	-.116**	-.010	.149**	1	.441***	.181***	.189***	-.316***	-.467***	-.210***
CS	-.063	-.062	.264***	.441***	1	.338***	.226***	-.322***	-.708***	-.466***
ORG	-.102*	-.156***	.192***	.181***	.338***	1	.574***	-.143**	-.358***	-.483***
REL	-.122**	-.150**	.162***	.189***	.226***	.574***	1	-.099*	-.208***	-.256***
STS	.246***	.234***	.144**	-.316***	-.322***	-.143**	-.099*	1	.615***	.340***
BO	.168***	.117**	-.160***	-.467***	-.708***	-.358***	-.208***	.615***	1	.590***
LEAVE	.157**	.144**	-.127**	-.210***	-.466***	-.483***	-.256***	.340***	.590***	1

Note. PerACEs = personal ACEs of teachers; StACEs = caseload of students who have experienced ACEs; EMP = empathy; RES = resilience; CS = compassion satisfaction; ORG = organizational supports; REL = relational supports; STS = secondary traumatic stress; BO = burnout; LEAVE = intent to leave profession.

* $p < .05$ (two-tailed), **$p < .01$ (two-tailed), *** $p < .001$ (two-tailed)

Table 4.5 provides a summary of the descriptive statistics for the measured variables used in the study including the mean, standard deviation, range, skewness, and kurtosis for each of the variables. I completed two measurement models and one structural model to create a final TCCRM.

Table 4.5

Summary of the Descriptive Analysis of Measured Variables

Variable	*n*	*M*	*SD*	Range	Skewness	Kurtosis
PerACEs	542	2.34	2.72	.00-10.00	1.32	1.47
StACEs	515	48.07	27.26	.00-100.00	.21	-.90
EMP	542	21.60	2.86	11.00-25.00	-.74	.04
RES	542	30.83	5.42	.00-40.00	-.69	1.53
CS	540	50.00	10.00	19.63-65.59	-.45	-.36
ORG	540	20.88	3.55	6.00-28.00	-.32	.38
REL	541	34.00	4.08	18.00-40.00	-.56	.04
STS	541	50.00	10.00	29.81-83.91	.48	.09
BO	539	50.00	10.00	25.85-79.63	.19	-.43
LEAVE	539	14.53	6.95	4.00-28.00	.13	-1.06

Note. *N* = 542. PerACEs = personal ACEs of teachers; StACEs = caseload of students who have experienced ACEs, EMP = empathy, RES = resilience; CS = compassion satisfaction; ORG = organizational supports; REL = relational supports; STS = secondary traumatic stress; BO = burnout.

Missing Data

Two steps were taken to address missing data in the SEM analyses. Initially, when calculating summary scores for the measured variables used in this study (e.g., PerACEs, EMP, RES, CS, ORG, REL, STS, BO, LEAVE), I only included means of scales that were at least 80% completed (See Appendix K for SPSS syntax). Next, AMOS uses the full information maximum likelihood method which acts to "maximize the likelihood that the data (the observed covariances) were drawn from this population" (Kline, 2016, p. 235). This method also estimates the means of exogenous variables and intercepts of endogenous variables in the model (Keith, 2015). Goodness-of-fit comparisons using complete and incomplete data samples show this method to produce similar statistical results for each supporting its use with missing data (Byrne, 2016).

Measurement Models

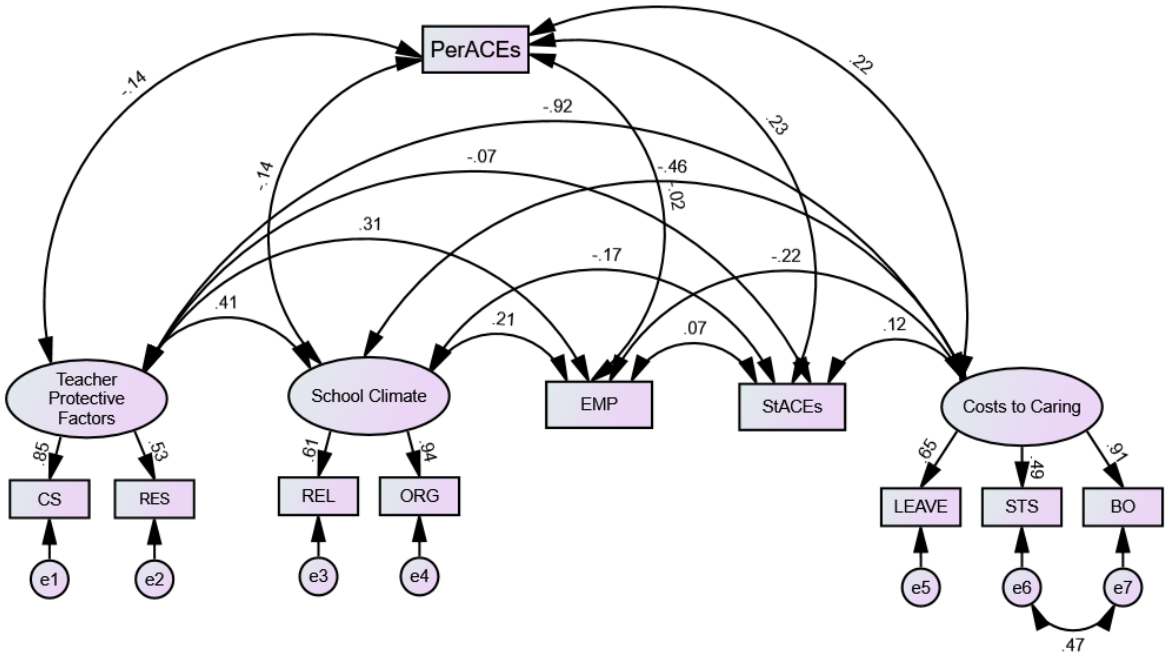
The initial measurement model consisted of 20 variables which included the 3 latent variables of teacher protective factors (TPF), school climate (SC), and costs to caring (CTC), 10 measured variables (i.e., PerACEs, RES, CS, ORG, REL, StACEs, EMP, STS, BO, LEAVE), and 7 errors (i.e., e1, e2, e3, e4, e5, e6, e7). The latent variables of TPF and SC only consisted of two measured variables each. Even though it is preferable for latent constructs to consist of three or more measured variables, latent constructs of one measured variable are acceptable, and latent constructs of four measured variables have been described as excessive (Iacobucci, 2010). Each of the measured and latent variables were set to correlate with each other. To avoid negative variance estimates, known as Heywood cases, the errors for STS and BO were also correlated (Kline, 2016). As latent variables have no inherent scaling, a scaling constraint was defined where one measured variable path for each of the latent variables was set to 1.0. This technique is

known as the unit loading identification (ULI) constraint (Kline, 2016). Measurement model 1 (MM1) was then estimated.

Figure 4.1 shows the standardized results of MM1 (see Appendix L for MM1 AMOS text output). Results showed that MM1 was not a good fit for the data (X^2 (22) = 197.251, $p < .001$). It should be noted that although X^2 is typically reported in SEM analyses, the statistical test is sensitive to sample size and often shows significance (indicating poor fit) even when the fit is good (Iacobucci, 2010). Factor loadings for CS (.85), RES (.53), REL (.61), and ORG (.94) showed strong correlations for the latent constructs of teacher protective factors and SC. Only LEAVE (.65) and BO (.91) showed strong correlations for the latent construct of costs to caring. STS (.49), however, showed only a moderate correlation. All of the covariances between latent variables were significant, but a number of the covariances between measured variables and latent variables were not (e.g., StACEs <--> TPF, StACEs <--> CTC, StACEs <--> EMP, PerACEs <--> EMP, PerACEs <--> SC, PerACEs <--> TPF).

Figure 4.1

Measurement Model 1 with Standardized Estimates

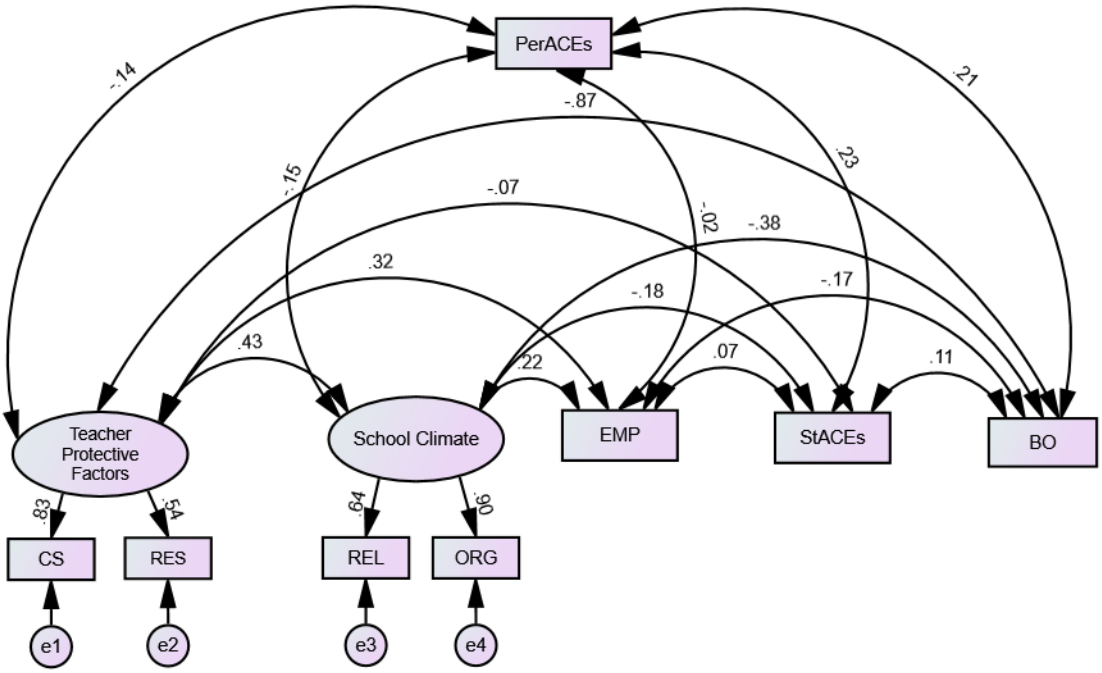


To further determine model fit, the Akaike information criterion (AIC), Tucker-Lewis index (TLI), comparative fit index (CFI), and root mean square error of approximation (RMSEA) were used. General rules for these fit indices state that for model acceptance AIC should be used for model comparison with the smaller values indicating a better relative fit. Both CFI and TLI should be $\geq$ .95, and RMSEA should be < .06 to .08 with confidence intervals (Schreiber et al., 2006). Results from MM1 fit indices show that the model should not be accepted, CFI (.89), TLI (.72) and RMSEA (.12, CI [.11,.14]).

To improve model fit and to avoid inadmissible results, the costs to caring construct was dissolved leaving only the BO variable as a cost to caring measure. Figure 4.2 shows standardized results of this final measurement model (FMM, see Appendix M for AMOS text output).

Figure 4.2

Final Measurement Model with Standardized Estimates



Results showed that FMM was a better fit for the data (X^2 (9) = 19.124, p = .02). All of the other fit indices supported model acceptance, CFI (.99), TLI (.96) and RMSEA (.05, CI [.02, .07]). I then used the FMM to create the structural models.

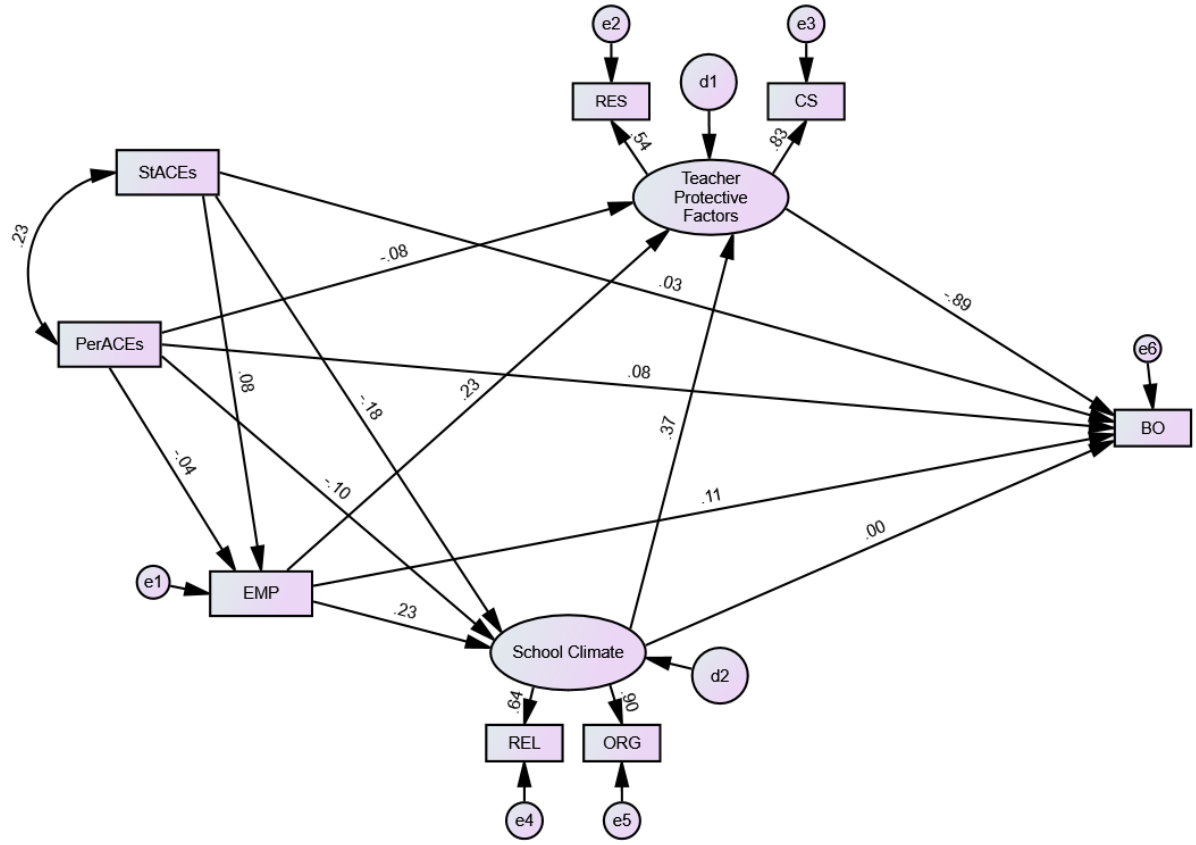
Structural Model

In SEM, the structural model is sometimes referred to as the "path model" which shows the relationships amongst constructs and consists of a series of regression analyses (Iacobucci, 2009, p. 676). To determine the mediating factors that contribute to teachers' costs to caring, structural model (SM) shown in Figure 4.3 was created. SM contained two measured exogenous variable (i.e., PerACEs and StACEs) and 17 endogenous variables. The endogenous variables included the measured variables (i.e., RES, CS, ORG, REL, EMP, BO), the latent variables (i.e.,

TPF, SC), and errors and disturbances (i.e., e1, e2, e3, e4, e5, e6, d1, d2). The curved, double-headed arrow between PerACEs and StACEs represents a correlational relationship. As previously stated, the StACEs variable was measured by asking teachers their perception of the percentage of students on their current caseload that have experienced ACEs and not by actual student ACE scores. As such, a correlational relationship was hypothesized. Directional arrows in the model indicate the paths that were theorized to explain the relationships amongst the variables. In the current model PerACEs indirectly affects BO through EMP, SC, and TPF. StACEs also indirectly affects BO through EMP and SC. Both PerACEs and StACES also directly affect BO. Further, both EMP and SC indirectly affect BO through TPF, and has a direct effect on BO as well. As SM is not an equivalent model to FMM results differed slightly. The chi squared for SM was less significant than the FMM (X^2 (10) = 19.129, p = .039). The model fit for SM also differed slightly from the FMM, CFI (.99), TLI (.96) and RMSEA (.04, CI [.001, .07]).

Figure 4.3

Structural Model with Standardized Estimates



Results from standardized (*β)* and non-standardized (*B)* regression path coefficients (see Table 4.6) showed ten significant paths ($p < .05$) in the SM. The critical ratio (C.R.) which operates like a *z* statistic in SEM, must be $\geq \pm 1.96$ to show significance. According to Byrne (2016), non-significant paths may be considered unimportant in the model.

Table 4.6

Regression Path Coefficients and Their Significance for Structural Model

Path			*B*	*β*	*SE*	C.R.	*P*
EMP	<---	PerACEs	-.043	-.041	.046	-.934	.350
EMP	<---	StACEs	.008	.078	.005	1.731	.083
SC	<---	EMP	.258	.231	.051	5.088	***
SC	<---	PerACEs	-.122	-.104	.055	-2.232	.026
SC	<---	StACEs	-.021	-.175	.006	-3.649	***
TPF	<---	EMP	.242	.234	.053	4.575	***
TPF	<---	PerACEs	-.089	-.082	.053	-1.678	.093
TPF	<---	SC	.340	.369	.065	5.223	***
RES	<---	TPF	1.000	.545		constrained path	
CS	<---	TPF	2.814	.826	.232	12.126	***
ORG	<---	SC	1.000	.900		constrained path	
REL	<---	SC	.816	.640	.104	7.839	***
BO	<---	SC	-.007	-.002	.151	-.049	.961
BO	<---	EMP	.396	.112	.129	3.075	.002
BO	<---	StACEs	.009	.025	.011	.814	.415
BO	<---	TPF	-3.038	-.888	.299	-10.170	***
BO	<---	PerACEs	.302	.081	.126	2.397	.017

Note. PerACEs = personal ACEs of teachers; StACEs = caseload of students who have experienced ACEs; EMP = empathy; RES = resilience; CS = compassion satisfaction; ORG = organizational supports; REL = relational supports; BO = burnout; TPF = teacher protective factors; SC = school climate.

*** $p < .001$.

Indirect Effects and Direct Effects

The mediating factors in the model that contribute to teachers' costs to caring can best be explained by the indirect and direct effects of the variables on BO. Indirect effects are the same as mediators and are calculated by multiplying the paths to the desired dependent variable and adding those paths together (Keith, 2015). For example, the indirect effects of SC on BO are

calculated by multiplying the path from SC to TPF (.37) and the path from TPF to BO (-.89). The resulting indirect effect for SC on BO is -.33. To determine the total effect of a variable on another, all of the indirect effects are summed with the direct effect (Keith, 2015). The total effect of SC on BO would then be -.33 as the direct effect of SC on BO (-.00) is added to previously discussed indirect effect of -.33. According to Keith (2015), effect sizes of or over .25 are considered large, .10 are moderate, and .05 are small but meaningful.

Table 4.7 shows the direct, indirect, and total effects of PerACEs, StACEs, EMP, SC, and TPF on BO. Final results are as follows. The exogenous PerACEs had a small direct and moderate indirect and total effects on BO. The exogenous StACEs had a small total effect on BO. The measured variable EMP had a moderate positive direct effect, a large negative indirect effect, resulting in a negative moderate total effect on BO. The effect of SC on BO was shown to be almost entirely indirect, with a negative large effect only slightly augmented by its direct effect. Finally, the entire effect of TPF on BO was shown to be direct. The direct and total effect of TPF on BO was also the strongest effect in the model with a negative large effect of -.89.

Table 4.7

Direct, Indirect, and Total Effects of Model Variables on Burnout

Variable	Direct Effect	Indirect Effects	Total Effects
PerACEs	.08	.11	.20
StACEs	.03	.04	.07
EMP	.11	-.28	-.17
SC	-.002	-.33	-.33
TPF	-.89	.00	-.89

Note. *N* = 542. All effects are standardized. PerACEs = teachers personal ACEs; StACEs = teacher's perceived caseload of students with ACES; EMP = empathy; SC = school climate; TPF = teacher protective factors.

Final analyses found a number of other small, moderate, and large effects amongst other model variables (see Table 4.8). The largest direct and total effect was shown with SC on TPF. This was followed by a large total effect shown with EMP on TPF. In fact, EMP showed moderate direct effects on both SC and TPF. PerACEs also showed a moderate negative direct effect on SC, and moderate negative total effects on SC and TPF. Small negative direct and indirect effects were also found from PerACEs on TPF. Finally, a small indirect effect was found with EMP on TPF. These results indicate that all of the variables in the model affect each other in various ways.

Table 4.8

Direct, Indirect, and Total Effects of Other Model Variables

Variable	Direct Effect	Indirect Effects	Total Effects
PerACEs on			
EMP	-.02	.00	-.04
SC	-.14	-.01	-.11
TPF	-.09	-.05	-.13
StACEs on			
EMP	-.04	.00	.01
SC	-.10	.02	-.16
TPF	-.08	-.04	-.04
EMP on			
SC	.23	.00	.23
TPF	.23	.09	.32
SC on			
TPF	.37	.00	.37

Note. *N* = 542. All effects are standardized. PerACEs = teachers personal ACEs; StACES = teacher's perceived caseload of students with ACES; EMP = empathy; SC = school climate; TPF = teacher protective factors.

Summary

This chapter presented the results of data analyses. Results included the extent to which Maine teachers experience costs to caring and the prevalence of Maine teachers' personal and professional ACEs exposure. The chapter then examined findings of how costs to caring are related to teachers' ACEs exposure. The results of SEM analyses were discussed with two measurement models and one structural model presented. Various direct, indirect, and total effects of variables were presented as further support for the model. Chapter Five will further discuss these results, provide limitations of the study, and examine future research implications.

CHAPTER FIVE

DISCUSSION

The current study sought to determine the prevalence of costs to caring (i.e., STS, burnout, intent to leave) in teachers in the State of Maine and to determine the impact that professional and personal ACEs exposure has on such costs. Further, the purpose of this study was to create a TCCRM using SEM that identified personal and professional mediating factors that contribute to the extent to which Maine teachers experience these costs to caring. The 12-factor CFRM was used as a theoretical framework for the TCCRM (Ludick & Figley, 2017). Molnar et al. (2017) noted that the first two steps in taking a public health approach to addressing the impacts of working with those who have experienced trauma are "(a) defining the problem including measuring the scope or prevalence [and] (b) identifying risk and protective factors for negative outcomes" (p. 129). The current study sought to address both steps.

This chapter first evaluates the results from the first two research questions. The chapter next provides a final TCCRM, which identifies the mediating factors that contribute to teachers costs to caring, and outlines implications for policy and practice. The chapter then addresses study limitations, implications for future research, and ends with a discussion of study significance.

Teachers and Costs to Caring

Research question one asked: *What is the extent to which Maine teachers experience costs to caring?* These costs to caring are conceptualized in the current study as STS, burnout, and intent to leave the profession. Regarding these costs, the popular media narrative has often been that teachers are stressed out, burned out, and "leaving the classroom in droves" (Garlinghouse, 2020). A recent *Education Week* archive search, for example, found 484 results for the keyword search "teacher burnout" and 6,091 results for "teacher stress" (https://www.edweek.org/; 11, July

2020). There is some support for that narrative. A poll of 556 randomly selected public school teachers found that 50% have seriously considered leaving the profession, a percentage which rose to 62% if the teachers felt undervalued by their community (*51st annual PDK poll*, 2019). Bontrager et al. (2012) also found that educators showed a higher incidence of STS than other professions.

The current study of Maine teachers did not completely fit this narrative, however. The current sample showed a lower incidence of STS and a similar incidence of burnout as to what is to be expected in the general population — a surprising contrast to the popular burned out teacher narrative. These results are similar to findings of Ainsworth & Oldfield (2019) who recognized the complex nature of burnout and noted that "teachers were not the uniformly disenchanted bunch we might expect" (p. 122). This is not to say there is no reason for concern, however, as 8.9% of the current sample agreed or strongly agreed that they were recently looking for another job. This percentage almost mirrors findings of the Learning Policy Institute who found an 8% yearly teacher attrition rate, an increase from 5% in the 1990s (Carver-Thomas & Darling-Hammond, 2017).

It is also important to note, however, that these findings were compiled *before* the COVID-19 pandemic, which as of this writing continues to disrupt schools. Many states have noticed increased teacher attrition since the start of the pandemic. In Arizona, for example, approximately 400 teachers typically leave at the end of the school year, by August 2020 that number rose to over 750 (Irish, 2020). The hybrid education model adopted by many districts, which consists of teachers teaching students remotely and in-person simultaneously, also threatens to increase costs to caring, with teachers reporting an increased workload and feelings of being overwhelmed and exhausted. To address these concerns in the State of Maine, the

MDOE partnered with retired teachers to create a "warmline" teachers can utilize to manage stress and anxiety (Feinberg, 2020). The lower levels of STS and BO findings in this study, therefore, should be regarded cautiously.

Teachers and Personal and Professional ACEs and Costs to Caring

Research question two asked: *How are these costs to caring related to Maine teachers' personal and professional ACEs exposure?* I initially hypothesized that teachers' personal and professional ACEs exposure would act as risk factors in their development of costs to caring. Findings suggested some support for this hypothesis.

In general, the sample unexpectedly showed a slightly lower incidence of teachers having personally experienced one or more of the traditional ACEs (59%) than has been found in other studies wherein prevalence has been shown to be anywhere from 61% to 64% (Anda et al., 2006; McLaughlin et al., 2013; Merrick et al., 2019). The lower prevalence of traditional ACEs in the sample may be due primarily to race. Merrick et al., (2019), for example, found that respondents of different racial groups reported a higher incidence of having one or more ACEs than whites who reported a 59.8% prevalence (e.g., Black = 68%, Hispanic 61.8%, American Indian/Alaska Native = 71.2%, Other = 74.5%). It should be noted, however, that respondents in the current study reported a higher than expected prevalence of having experienced four or more ACEs, the cutoff score typically used to determine higher levels of risk (Anda et al., 2006; Merrick et al., 2019). Merrick et al. (2019) found a 15.6% prevalence of respondents having four or more of the traditional ACEs, compared to 17.9% of the current study's respondents. Put another way, although the overwhelmingly white sample in the current study (95.8%) reported having experienced slightly fewer ACEs than expected, the number of those who experienced four or more ACEs is higher, which puts them at higher risk for deleterious physical and mental health

outcomes (Anda et al., 2006). Prevalence of the expanded ACEs measure was higher (64.2%) than traditional ACEs, which is to be expected as there were four additional indicators included in the measure.

As discussed in Chapter Four, all of the costs to caring variables of burnout, STS, and intent to leave showed a small positive correlation with teachers' personal traditional and expanded ACEs scores. Further, teachers' personal ACEs exposure showed small negative correlations with resilience and the two school climate variables, ORG and REL (see Table 4.4). The latter phenomenon was mirrored in the SM, which showed that teachers' personal ACEs exposure also had a moderate negative total effect on school climate (-.11). Teachers' personal ACEs exposure was also found to have a small direct effect (.08), and moderate indirect (.11) and total effects (.20) on burnout (see Table 4.9). These results support the assertion that personal trauma similar to that experienced by those being served is a risk factor in the development of costs to caring (Ludick & Figley, 2017).

It should be stressed, however, that although teachers' personal ACEs were found to be a risk factor in the development of costs to caring, caution must be taken. Anda et al. (2020) has warned that the over reliance on one's ACEs score to assess risk may lead to discrimination, stigmatization, and misclassification. Such consequences would be disastrous in public schools which are already facing a teacher shortage (Betancourt, 2018; Sutcher et al., 2016). Further, McNally (2006) has noted that "by viewing more and more of modern life through the lens of trauma, we may overmedicalize normal emotional responses to stressors and undermine human resilience in the face of adversity." In order to avoid these unintended consequences, the current findings, then, must be contextualized and understood as one small part of a complex construct.

Professionally, a teacher's caseload of students who have experienced ACEs did not have the direct effect on teachers' costs to caring that I had originally hypothesized. The SM (see Figure 4.3) shows a small total effect on burnout (.07). The caseload of student ACEs, however, did have a negative moderate effect on school climate (-.16), the strongest effect for that variable in the study. This result is not surprising as ACEs have been found to impact student behavior (Porche et al., 2016), academic achievement (Duplechain et al., 2008; Jimenez et al., 2016; Perfect et al., 2016), and school engagement (Porche et al., 2016), factors that have all been shown to effect school climate (Grayson & Alvarez, 2008).

One interesting observation is the correlation in the SM between teachers' personal ACEs and their perception of their students' ACEs, (.23). As the StACEs variable resulted from teacher reporting, it is impossible to ascertain how many students actually have experienced ACEs. It is therefore difficult to determine exactly why those teachers who themselves have experienced ACEs report that their students have also experienced them. One explanation may be the teacher's level of empathy. Teachers who have experienced difficulties in childhood may be more apt to recognize such difficulties in others. The SM did show a small but meaningful direct effect of empathy on StACEs (.08). The finding, however, may instead reflect the psychological concept of transference. Transference is a phenomenon that can be defined as "the unconscious repetition in a current relationship of patterns of thoughts, feelings, beliefs, expectations, and responses that originated in important early relationships" (Pearlman & Saakvitne, 1995, p. 100). In the current context, teachers may be transferring expectations related to their own past ACEs to their students who may or may not have had similar experiences. In other words, the teachers who personally have experienced ACEs assume that others must have had similar experiences. Ultimately, the

strength of the effect warrants further research to be sure that the discrimination, stigmatization, and misclassification as discussed by Anda et al. (2020) does not occur with students.

Teacher Costs to Caring Resilience Model

Research questions three asked: *What personal and organizational mediating factors contribute to the extent to which Maine teachers are currently experiencing costs to caring?* To answer this question, a hypothesized TCCRM (see Figure 3.1) was tested using SEM.

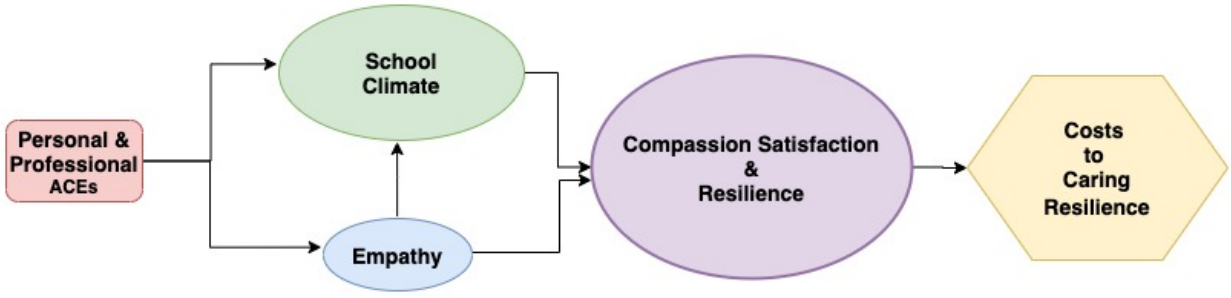
Ludick and Figley (2017) theorized a number of personal factors related to compassion fatigue resilience including empathy, exposure to suffering, personal traumatic memories, and personal protective factors. For the current study, I hypothesized that for teachers, costs to caring resilience may also include organizational factors such as school climate and ACEs professional development. The hypothesized conceptual framework for the current study (see Figure 1.2) stated that teachers' understanding of ACEs, personal history of ACEs, and caseload of students who have experienced ACEs would have a significant effect on the extent to which they experience costs to caring. I further hypothesized that teachers' personal protective factors of resilience (the ability to bounce back from adversity) and their emotional connection to others and their profession mediated the extent to which they experienced costs to caring. School climate acted, in the hypothesized model, to mediate the relationship of the aforementioned factors.

The final results of the SM show support for the hypothesized conceptual framework of the TCCRM. Figure 5.1 represents the final TCCRM based on the SM. This final TCCRM depicts the levels of impact by the size of the variables represented. Empathy, for example, showed the smallest total effect on burnout in the SM (-.17) and is therefore represented by the smallest shape in the TCCRM. Teachers' personal and professional exposure to ACES, represented by a slightly larger rectangle, showed the second smallest (albeit moderate) total effects with PersACES (.20)

and StACEs (.07) together representing a total effect of .21. School climate showed a large total effect (-.33) which is mirrored in the larger oval, followed by the considerably larger total effect (-.89) of compassion satisfaction and resilience shown by the largest shape in the model. As shown in the figure, the impact of both of the aforementioned factors was primarily indirect, although as previously discussed, empathy had a moderate direct effect (.11) on burnout as well. Compassion satisfaction and resilience, visualized as the largest shape in the figure, are shown to have the greatest direct effect on teacher costs to caring resilience.

Figure 5.1

Teacher Costs to Caring Resilience Model



As discussed in the previous section, current findings suggest that teachers' personal and professional exposure to ACEs act as a risk factor for their ultimately experiencing costs to caring. This study further finds that other factors have a stronger impact on those costs to caring. These factors are discussed in the following sections.

Empathy

As hypothesized, empathy showed mixed effects on burnout. Primarily, moderate positive effects were both found between empathy on TPF (.23) and empathy on school climate (.23). This suggests that teachers' empathy impacts them personally in terms of their own resilience and

compassion satisfaction, and professionally in terms of working in a positive school climate. In contrast, there was a positive moderate direct effect on burnout (.11), meaning that the more empathetic teachers were, the more at risk they were to burnout. Findings still show a negative moderate total effect of empathy on burnout (-.17). These findings suggest that even though high levels of empathy may lead to burnout, overall empathy is a protective factor against the development of burnout. These findings support Ludick and Figley's (2017) assertion of the paradoxical nature of empathy. According to the researchers, empathy can be protective and increase work satisfaction, but it can also be a risk factor which leads to the development of STS.

The School Climate Effect

As I had originally hypothesized that school climate would have a strong direct effect on teachers' costs to caring, the lack of that effect (-.002) was one of the more surprising findings in this study. This is not to say, however, that school climate is not an important protective factor. On the contrary, school climate showed a strong negative *indirect* effect (-.33), the second strongest effect in the study. In the SM, school climate acted as a mediator between teachers' personal ACEs, empathy, and burnout, as well as the latent variable of teacher protective factors and burnout. A positive school climate had a strong direct effect on a teachers' personal resilience and compassion satisfaction (.37), which in turn has a strong negative effect on teachers costs to caring (-.89). According to these findings, teachers who work in a positive school climate are more likely to be satisfied with their jobs, fulfilled by helping their students, and resilient in the face of adversity. They are also less likely to be burned out.

The current study's findings expand on those of Grayson and Alvarez (2008) who found that positive school climate, and teachers level of satisfaction with that climate, were protective factors against the burnout factors of depersonalization, cynicism, and emotional exhaustion.

Cohen et al. (2009) further found that schools with a positive school climate not only showed positive student outcomes, they also aided in teacher retention. Finally, a positive school climate has also been shown to impact teacher self-efficacy and job satisfaction (Aldridge & Fraser, 2016). Although the current study did not find that school climate had a direct effect on teachers' costs to caring, the strong indirect effect showed it to be an important protective factor.

The Power of Compassion Satisfaction and Resilience

The strongest effect in the SM was the negative direct effect that a teacher's protective factors consisting of compassion satisfaction and resilience had on burnout (-.89). The total effect of these personal protective factors dwarfed the second strongest negative total effect of school climate (-.33) and was four times higher than the risk factor of teacher personal ACEs (.21). These findings are promising as, unlike the ACEs teachers have experienced in childhood, teachers have some control over their personal resilience and compassion satisfaction. As Masten (2001) has noted, "Resilience does not come from rare and special qualities, but from the everyday magic of ordinary, normative human resources in the minds, brains, and bodies of children, in their families and relationships, and in their communities" (p. 235). Not only is resilience an ordinary phenomenon, but there is research to suggest that it can also be taught (Southwick & Charney, 2018). In schools, Gu and Day (2013) have argued that teacher resilience is neither a fixed nor innate construct and is impacted by multiple socio-cultural factors such as work and life influences. Interventions have also been found to increase compassion satisfaction. Craig and Sprang (2010), for example, found that the use of evidence-based practices such as cognitive behavioral therapy and eye movement desensitization and reprocessing (EMDR) increased compassion satisfaction in a national sample of trauma therapists.

Implications for Policy and Practice

Current findings suggest two primary categories of factors which lead to costs to caring resilience in teachers: *personal factors* (i.e., resilience, compassion satisfaction, empathy) and *professional factors* (i.e., school climate and job satisfaction). By understanding these factors teachers, administrators, and policy makers can address teachers costs to caring on multiple levels. These levels can best be understood through the theoretical framework of human ecological theory (Bronfenbrenner, 1994). Human ecological theory states that, much like ecological systems in biology, humans have complex, multilayered systems that interact throughout a person's life span. These systems include a microsystem of an individual's family, school, church, peers, health services, etc.; a mesosystem which is comprised of the interconnections between the microsystems; an exosystem in which the individual does not have an active role, but still intersects with the social setting; a macrosystem which defines the culture of the individual; and a chronosystem which both includes the life course pattern and the sociohistorical circumstances of an individual. In the current context, interventions can be framed by addressing teachers costs to caring at an individual level, a school level, and a policy level. The following sections offer recommendations that address a number of the aforementioned systems.

Resilience and Compassion Satisfaction Professional Development

The current study suggests that, in part, a teacher's resilience is one of the most important protective factors in the prevention of costs to caring. Masten (2014) further emphasized such and noted that "stress reduction and resilience promotion for teachers and other staff in schools may be an important strategy for promoting resilience in individual students as well as the school context as a whole" (p. 251).

Aguilar (2018) has argued that before organizational and systemic conditions can be addressed, educators must first develop individual resilience by understanding resilience factors through self-reflection and habit building. Southwick and Charney (2018) have identified ten resilience factors gathered from psychological, sociological, medical and neurobiological research that have proven to be effective in bouncing back from adversity. The researchers described the following as coping mechanisms utilized by resilient individuals: "realistic optimism, facing fear, moral compass, religion and spirituality, social support, resilient role models, physical fitness, brain fitness, cognitive and emotional flexibility, and meaning and purpose" (pp. 15-16). Southwick and Charney (2018) assert that although difficult, resilience can be developed. These ten factors also encompass the three-factor construct of Prince-Embury and Courville (2008) and the five-factor resilience core as defined by Wagnild (2013) discussed in Chapter Two. Fleming et al. (2013) outline a number of adult resilience programs that have shown promising results including the Promoting Adult Resilience (PAR) Program, the READY program (Resilience and Activity for Every Day), the Personal Resilience and Resilient Relationships (PRRR) program, and the Inner Resilience Program, the latter of which is designed specifically for teachers (p. 392).

To build individual resilience in organizations, Seligman (2018) has suggested a three-tiered resilience training, similar to the Comprehensive Soldier Fitness program based on positive psychology and designed as a proactive program to train soldiers to be resilient in the face of adversity (Cornum et al., 2011). Positive psychology is the study of positive attributes and institutions, and has been found to increase personal happiness and decrease depressive symptoms (Seligman et al., 2005). The program suggested by Seligman (2018) consists of personal resilience assessment, comprehensive resilience professional development, and master resilience

training for organization leadership. The initial assessment is a brief questionnaire that determines emotional fitness, family fitness, social fitness, and spiritual fitness. Professional development can be completed online and includes training on the aforementioned "fitnesses" (p. 30), as well as training on post-traumatic growth. Organizational leadership, in this model, would be further trained on various resilience strategies and organizational relationship building. This model's strengths lie in its focus on both individual and organizational resilience, which would be important factors in resilience training for teachers. As Southwick and Charney (2018) noted, however, it is much easier for individuals to learn to become resilient than communities as when crises fade in communities so does the impetus for professional development within them.

Along with resilience, compassion satisfaction was found to be an important protective factor that guards against the development of costs to caring. In the current study, compassion satisfaction was partly measured by teachers feeling successful as a teacher and being pleased with the ability to keep up with teaching practices and techniques. These findings are not surprising, and are mirrored in the literature. Tsouloupas et al. (2010), for example, established a positive correlation between a teacher's self-efficacy, perceived student misbehavior, and emotional exhaustion. Thus, if teachers have confidence in their abilities in dealing with perceived negative student behavior, they will be less likely to become emotionally exhausted, which in turn makes them less likely to burnout. Nichols et al. (2017) theorized that teachers are more likely to express feelings of happiness, joy, and satisfaction as a result of a perceived successful day of teaching in which students learned something and feelings of and frustration as a result of feeling a lack of control of events that occurred in the classroom. These effects of teachers' self-efficacy and personal control in the classroom are supported by social cognitive theory which states, in part, that "among the mechanisms of personal agency, none is more central

or pervasive than people's beliefs in their capability to exercise some measure of control over their own functioning and over environmental events" (Bandura, 2001, p. 10).

To aid in the development of compassion satisfaction, then, teachers and school administrators should prioritize evidence-based professional development in techniques that support effective classroom management and instructional practices, all the while understanding the importance of teacher agency in such practices. Findings of the current study also showed, however, that the ACEs teachers experienced in childhood (or their perception thereof) negatively affect the factors of resilience and compassion satisfaction, as well as school climate. Cohen (2013) has argued that creating a systemic, data driven school climate strategy that focuses on safety, teaching and learning, interpersonal relationships, and the institutional environment will also help build resilience in the members of the school community. Systemic approaches to address these issues along with policy implications are discussed below.

Evidence-Based Focus on School Climate and Trauma-informed Practices

As discussed in Chapter One, a number of states and school districts have developed legislation, policies, and practices to address ACEs in schools. Jones et al. (2018) has suggested that an inquiry-based approach to ACEs interventions in schools may help to increase teacher empowerment, shift disciplinary practices from punitive to more positive approaches, decrease teacher reported levels of student disciplinary incidents, and increase teacher perceived school climate. Blodgett and Dorado (2016) argued, however, that in schools a "unifying framework is essential if trauma-informed practice is not to become one more competing strategy" (p. 71). In order for schools to be able to address issues such as ACEs, school climate, student academic achievement, and student behavior, they should implement an integrated, systematic approach of targeted interventions (McIntosh & Goodman, 2016; Walker et al., 1996).

As of this writing, one such framework borrowed from the public health sector (i.e., multi-tiered systems of support; MTSS) is currently being utilized in thousands of schools worldwide (Gage et al., 2018). While the specific interventions utilized in MTSS vary depending on the program focus, the basic framework is the same. The first tier of the MTSS framework consists of universal interventions, curriculum, or programs that will be provided to all participants. At this level, it is expected that 80 to 90% of participants will not require further interventions. Tier two consists of more differentiated, specialized, and targeted interventions, typically addressed in a group setting. At this tier approximately 5 to 10% will need no further intervention. For those not helped by either the interventions at the primary or secondary tiers, a tertiary tier provides high intensity, individualized interventions. This third tier consists of roughly 1 to 5% of participants. Sugai and Horner (2009) stated that all interventions should be based on scientific evidence, all decisions should be made only after the evaluation of carefully collected data, and all upper level tiers should include systematic screening measures used to determine the next level of intervention. In schools, MTSS is primarily utilized to address student academic achievement (i.e., response to intervention; RTI) and student behavioral problems (i.e., positive behavioral interventions and supports; PBIS; Jimerson et al., 2016; Sailor et al., 2009).

McIntosh and Goodman (2016) has suggested that instead of implementing parallel MTSS frameworks to address different issues (e.g., academic achievement, student behavior), frameworks should be blended into one. Likewise, researchers have recognized the adaptability of the MTSS framework to address a number of different issues including anxiety, bullying, ADHD, autism, depression, suicide, and aggression (Arora et al., 2019; Fabiano & Pyle, 2018; A. M. Jones et al., 2017; Nickerson, 2017; Singer et al., 2018; Thomeer et al., 2017; Waschbusch et al., 2018). Most applicable to this discussion, MTSS frameworks have also been suggested to address

the complex nature of school climate and ACEs in schools (Chafouleas et al., 2016, 2018; VanLone et al., 2019).

The Wisconsin Department of Public Instruction has suggested weaving together PBIS and trauma-sensitive practices into one framework (Evers, n.d.) The PBIS model, which seeks to improve the social, emotional, and academic outcomes of students is currently being implemented in over 23,000 schools both nationally and internationally with 13 states operating a statewide PBIS recognition system (Gage et al., 2018; Sugai & Horner, 2009). Central to the PBIS framework is extensive faculty and staff professional development on topics such as positive classroom management and positive school climate. PBIS is a data driven, evidence-based, prevention and intervention program with an online National Technical Assistance Center funded in part by the U.S. Department of Education that contains a wealth of information and resources for schools interested in implementing the program (Positive Behavioral Interventions & Supports OSEP Technical Assistance Center, 2018). From a policy perspective, the Center on PBIS has also provided a number of policy briefs with regards to culturally responsive practices, implementation in rural settings, and data driven decision making (Horner et al., 2015; Mcdaniel & Bloomfield, 2020; Rose et al., 2020). For students, PBIS has shown positive effects reductions in school suspensions, academic achievement, and office referrals (Flannery et al., 2014; Gage et al., 2018; Robert H Horner et al., 2009). More salient to this discussion, PBIS has also been shown to positively effect school climate (Bradshaw et al., 2009).

It is important to note that as this study has found personal and professional ACEs exposure has at least some effect on teachers, any trauma-sensitive program instituted in schools and any policy made to require such should include an explicit framework to address costs to caring and teachers (e.g., see National Center on Safe Supportive Learning Environments, 2018;

Wolpow et al., 2009). Fleming et al. (2013) argued that "is critical that schools promote the well-being of teachers so they can in turn support students in acquiring the social and emotional skills that are essential for school and life success" (p. 394). The findings of the current study suggest that the framework should specifically focus on teacher resilience, as previously discussed.

Ultimately, states, districts, and schools should consider an integrated MTSS framework as they look to implement policies addressing school climate and trauma-sensitive practices. For true sustainable change to occur, however, a number of implementation strategies must be addressed including a measure of fidelity, organizational capacity, and program effectiveness (Horner et al., 2017). Infrastructures should also be built at multiple levels including school, district, and state (Fixsen et al., 2013).

Limitations

One limitation of the study is the cross-sectional and self-reported nature of the survey. As Krathwohl (2009) noted, cross-sectional surveys reflect one moment in time from one sample of the target population. Results gained from a cross-sectional study, therefore, should be heeded cautiously. This is especially true with results from the ACEs section of the survey, which as discussed in Chapter Two has been shown to be prone to recall bias (Colman et al., 2016). Longitudinal studies of the TCCRM should be considered to determine if findings remain consistent over time.

Another limitation of the study is the way in which the survey was distributed. As the survey was emailed to MEA membership, with a cover letter specifically signed by the president of the MEA requesting participation, there is a possibility of bias. In order to counter that possibility, the survey was sent to the entire MEA membership and results were anonymous. The final sample was also representative of the population.

Finally, SEM requires a large sample and the hypothesized model consisted of a number of complex variables. At the same time, to be sure of adequate participation the online Qualtrics platform recommends that online surveys should not consist of over 90 questions. This challenge required the use of shorter measures that may not be as robust representations of study variables as other measures. The 15-question B-CSCS, for example, only measured two elements of school climate, only a portion of the 42-question original (You et al., 2014). Similarly, the CD-RISC-10 used to measure resilience does not take into account other resilience factors that the original 25-question CD-RISC does (Connor & Davidson, 2003). And the ProQOL, used in part to determine STS and burnout, are not as robust as other measures used to measure those concepts (e.g., see Bride & Walls, 2006; Maslach et al., 2001).

Implications for Future Research

As this is the first study to consider a specific TCCRM, future research should look to replicate and build upon the model specifically by looking more closely at the concepts of resilience and trauma. Because of the number of variables assessed in the current study, the survey assessed the concept of teachers' resilience as a whole. Resilience research, however, has shown the concept to be complex and consisting of a number of different factors (Prince-Embury & Courville, 2008; Southwick & Charney, 2018; Wagnild, 2014). It would be important to understand, then, just which resilience factors are the most effective protective factors against the development of teacher costs to caring. Likewise, the focus on ACEs as the type of trauma in the study may be too confining and not encompass traumatic events that affect teachers in adulthood. Future research could evaluate if other types of personal trauma impacts teachers in similar ways.

The findings of this study can also be considered an almost perfect pre-test sample for where teachers in the State of Maine were in terms of their costs to caring *before* the impacts of

the COVID-19 pandemic. All public schools in the state were closed on or shortly after March 13, 2020, the time immediately following the data collection for this study. Although the actual effects of the pandemic on education and schools are as of yet unknown, past research has suggested how widespread quarantines, school disruptions, and other traumatic events may impact teachers and their costs to caring. Extended quarantines, for example, have been shown to increase depression and PTSD as well as create feelings of uncertainty, fear, isolation, and anger (Brooks et al., 2020; Hawryluck et al., 2004). Hospital workers on the frontlines of an outbreak have shown increased traumatic stress and feelings of stigmatization, particularly if they had children, were a nurse, or coped by crowd avoidance (Maunder, 2004). O'Toole (2018) noted emotional exhaustion and burnout in teachers who continued to teach after a natural disaster. Similarly, after the school disruptions resulting from Hurricane Katrina, Alvarez (2010) noted that teachers were affected by the event as much as students and also needed attention. Most pertinent to the current discussion, Picou and Marshall (2007) found that the school disruptions and trauma caused by Hurricane Katrina forced teachers to often upend academic lessons in order to help students with the social and emotional toll resulting from the traumatic event. The aforementioned findings suggest the importance of evaluating the effect of COVID-19 on teachers and their costs to caring after their return to schools.

Conclusion

The COVID-19 pandemic has caused "unprecedented educational disruptions" around the globe with as many as 1.5 billion students in 165 countries having been affected by school closures (d'Orville, 2020). It is not hyperbolic to state that the COVID-19 pandemic may be the greatest widespread disruption to public education that the United States has ever encountered. The end of the 2019-2020 school year saw most U.S. school buildings closed for upwards of three

months due to the pandemic. The closest comparison may be to school closures during the 1918-1919 flu pandemic, but even then the median rate of school closures was only four weeks (Markel et al., 2007). Unlike the 1918 pandemic, during the COVID-19 pandemic most schools still tried to educate students and pivoted quickly to online and remote instruction. This crisis schooling proved extremely challenging. The socioeconomic, racial, and geographic inequities widened for many children in the U.S. As many as 25% of U.S. students, for example, reported that they did not have reliable access to the internet or a home computer, both of which were critical during remote learning (Auxier & Anderson, 2020). Many schools also struggled with providing special education services during the crisis, causing advocates in multiple states to file federal lawsuits (Mitchell, 2020). Researchers have warned that extended school closures could exacerbate the student learning loss expected during the summer and create a "COVID-Slide" of greater academic deficits (Soland et al., 2020). Minke (2020) has cautioned that the pandemic may cause "widespread emotional trauma" that will cause social, emotional, and behavioral issues with students that will require school-based interventions. The NEA has warned that the economic impacts of the pandemic could result in the loss of as many as two million education jobs in the United States, which would put extreme stress on remaining educators (National Education Association, 2020).

For teachers, remote teaching due to COVID-19 was particularly challenging. Teachers were forced to adapt lessons to new platforms and struggled to reach and connect with students, particularly those already at academic risk (Abbott, 2020). In an exceptionally vivid metaphor that explains the challenges and anxiety faced by many during this time, one first grade teacher in New York described her experience teaching during the COVID-19 pandemic as the following: "Here I am, at 66, within a year of full retirement, having to learn how to use Google Classroom

with 35 first graders at various places in their learning. I feel as though I am attempting to drive on a road that I am simultaneously paving while also following a paper map" (The New York Times, 2020).

Which brings us to the current study.

For decades, researchers have understood the deleterious emotional and psychological effects that can result from working with individuals who have experienced trauma and ACEs (McCann & Pearlman, 1990). Teachers, however, have been largely left out of the discussion surrounding such effects (Figley & Ludick, 2017; Stamm, 2016). Of the three published studies involving costs to caring and educators only one focuses specifically on teachers (Borntrager et al., 2012; Caringi et al., 2015; Koenig et al., 2018). In the United States, there are over 3 million public school teachers working with nearly 51 million students, many of whom have experienced trauma and ACEs (National Center for Education Statistics, 2019). It is highly likely that the widespread educational effects of the COVID-19 pandemic will not only exacerbate the emotional effects of previous trauma and ACEs, but for many may create even more. A healthy resilient teaching workforce prepared to face these challenges and others will be crucial moving forward. The present study seeks to address, at least in part, some of these concerns.

The findings of the current study show that teachers are not immune to Figley's (1995) costs to caring and thus should be included in any narrative on the topic. The TCCRM also has the potential to serve as a guide for teachers and schools as they seek to create a resilient teaching workforce. By understanding the impact of ACEs and empathy, creating schools with positive climate, and building resilience and compassion satisfaction in teachers, stakeholders may be able to mitigate the costs to caring that teachers face.

Teaching can be a challenging and emotionally exhausting profession. As we seek to help our students become resilient from the ACEs and trauma they have experienced in their own lives, we must also remember those who are helping to build that resilience. We must remember the teachers. After all, we cannot have healthy students without healthy schools, and we cannot have healthy schools without healthy teachers. Perhaps by doing so, instead of an age of trauma, future scholars will refer to the Post-COVID age as the *Age of Resilience*.

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APPENDICES

APPENDIX A. The Maine Teacher Resilience Survey

The Maine Teacher Resilience Study
Informed Consent

Please Read Before Completing

You are invited to participate in a research project being conducted by Sherry P. Brown, a doctoral candidate in the College of Education and Human Development at the University of Maine and faculty advisor Jim Artesani, Associate Dean of Graduate Education, Research, and Outreach and an Associate Professor of Special Education with the University of Maine College of Education and Human Development.

The following survey seeks to understand how personal and professional attributes (such as perseverance, empathy, and personal adversity history) affect you in your role as an educator. You must be at least 18 years old to participate in this study. You must also be a current employee of either a public or private PreK-12 institution in the State of Maine.

What Will You Be Asked to Do?

If you decide to participate, you will be asked to answer a few demographic questions, as well as questions from a number of different scales. This survey should take approximately 10-15 minutes to complete.

Risks

There is the possibility that you may become uncomfortable answering the questions. You may skip any questions that make you uncomfortable. A list of mental health and other support resources will be provided for you at the end of the survey for your use if necessary

While this study may have no direct benefit to you, this research may help us learn more about how various factors affect educators' levels of stress, compassion satisfaction, and burnout.

Compensation

If you complete the study, you will be entered in a drawing to **win one of 25 Visa Gift Cards worth $20 each.** To enter the survey, you will be brought to a different page that is not connected to your responses. Gift Cards will be emailed to the winners.

You must reach the end of the survey to enter, but you may skip questions during the survey.

Confidentiality

This study is anonymous. There will be no records linking you to the data. The data will be kept for an indefinite period of time on a password protected computer. Your specific set of demographic characteristics will not be linked to your responses in any reports, and only patterns of findings will be reported (e.g. “teachers over 50 report…”).

Voluntary

Participation is voluntary. If you choose to take part in this study, you may stop at any time. You may skip any questions you do not wish to answer. Return of the survey implies consent to participate.

Contact Information

If you have any questions about this study, please contact me at sherry.pineau@maine.edu, at (207) 660-5613. You may also reach the faculty sponsor of this study at arthur.artesani@maine.edu. If you have any questions about your rights as a research participant, please contact the Office of Research Compliance, University of Maine, 207/581-2657 (or e-mail umric@maine.edu).

Thank you so much for taking the time to complete this survey. Your voice is so important as begin to understand this work.

This study is funded in part by a generous donation from The Bingham Program, a charitable endowment at Tufts Medical Center established in 1932 to promote health and advance medicine in Maine.

End of Block: Informed Consent

Start of Block: Demographic Questions & School Climate

The Maine Teacher Resilience Study

Are you currently a PreK-12 teacher in the State of Maine?

- ○ Yes
- ○ No

Q1 Age

_____

Q2 Gender

- ○ Female
- ○ Male
- ○ Gender non-binary

Q3 Ethnicity

- ○ Black/African American
- ○ Hispanic/Latinx
- ○ American Indian/Alaskan Native
- ○ Asian
- ○ Native Hawaiian/Other Pacific Islander
- ○ White
- ○ Two or More
- ○ Prefer Not to Answer

Q4 Years of Experience in Education*

_____

Q5 Current School*

▼ Abraham Lincoln School Bangor Public Schools ... Other

Q6 Which of the following best describes your teaching role in the school?

▼ Classroom teacher ... Title I Teacher

Q7 Maine County that school is located in:

▼ Androscoggin ... York

Q8 Years at Current School*

_____

Q9 Percentage of your current students that you believe have experienced Adverse Childhood Experiences (e.g., physical, emotional, sexual abuse; physical or emotional neglect; missing caregiver due to death, divorce, military duty, or incarceration; living with a substance abuser; witnessing domestic violence; living with someone who has an undiagnosed mental illness).

_____

Q10 Have you received any training or professional development on Adverse Childhood Experiences over the past year?

- ○ Yes
- ○ No
- ○ Not sure

Q11 Do you consider your school to be trauma-sensitive, trauma-informed, or trauma-responsive?

- ○ Yes
- ○ No
- ○ Not sure

Please answer the following questions related to the school at which you currently work.

Q12 This school is a supportive and inviting place for students to learn.

- ○ Strongly agree
- ○ Agree
- ○ Disagree
- ○ Strongly Disagree
- ○ Not Applicable

Q13 This school sets high standards for academic performance for all students

- ○ Strongly agree
- ○ Agree
- ○ Disagree
- ○ Strongly Disagree
- ○ Not Applicable

Q14 This school promotes academic success for all students.

- ○ Strongly agree
- ○ Agree
- ○ Disagree
- ○ Strongly Disagree
- ○ Not Applicable

Q15 This school clearly communicates to students the consequences of breaking school rules.

- ○ Strongly agree
- ○ Agree
- ○ Disagree
- ○ Strongly Disagree
- ○ Not Applicable

Q16 The school fails to involve most parents in school events or activities.

- ○ Strongly agree
- ○ Agree
- ○ Disagree
- ○ Strongly Disagree
- ○ Not Applicable

Q17 This school is a supportive and inviting place for staff to work.

- ○ Strongly agree
- ○ Agree
- ○ Disagree
- ○ Strongly Disagree
- ○ Not Applicable

Q18 This school handles discipline problems fairly.

- ○ Strongly agree
- ○ Agree
- ○ Disagree
- ○ Strongly Disagree
- ○ Not Applicable

Q19 How many adults at this school really care about all students?

- ○ Nearly All
- ○ Most
- ○ Some
- ○ Few
- ○ Almost None

Q20 How many adults at this school acknowledge and pay attention to students?

- ○ Nearly All
- ○ Most
- ○ Some
- ○ Few
- ○ Almost None

Q21 How many adults at this school want all students to do their best?

- ○ Nearly All
- ○ Most
- ○ Some
- ○ Few
- ○ Almost None

Q22 How many adults at this school listen to what students have to say?

- ○ Nearly All
- ○ Most
- ○ Some
- ○ Few
- ○ Almost None

Q23 How many adults at this school believe that every student can be a success?

- ○ Nearly All
- ○ Most
- ○ Some
- ○ Few
- ○ Almost None

Q24 How many adults at this school treat all students fairly?

- ○ Nearly All
- ○ Most
- ○ Some
- ○ Few
- ○ Almost None

Q25 How many adults at this school support and treat each other with respect?

- ○ Nearly All
- ○ Most
- ○ Some
- ○ Few
- ○ Almost None

Q26 How many adults at this school feel a responsibility to improve this school?

- ○ Nearly All
- ○ Most
- ○ Some
- ○ Few
- ○ Almost None

YOU ARE DOING GREAT!

End of Block: Demographic Questions & School Climate

Start of Block: Empathy Questions & Intent to Leave

The Maine Teacher Resilience Study
Continued

Q27 I find that I am "in tune" with other people's moods.
0=does not describe me well to 4=describes me very well

- ○ 0
- ○ 1
- ○ 2
- ○ 3
- ○ 4

Q28 I am not really interested in how other people feel.
0=does not describe me well to 4=describes me very well

- ○ 0
- ○ 1
- ○ 2
- ○ 3
- ○ 4

Q29 I don't give others' feelings much thought
0=does not describe me well to 4=describes me very well

- ○ 0
- ○ 1
- ○ 2
- ○ 3
- ○ 4

Q30 I always try to tune in to the feelings of those around me.
0=does not describe me well to 4=describes me very well

- ○ 0
- ○ 1
- ○ 2
- ○ 3
- ○ 4

Q31 It's easy for me to get carried away by other people's emotions.
0=does not describe me well to 4=describes me very well

- ○ 0
- ○ 1
- ○ 2
- ○ 3
- ○ 4

Q32 My feelings are my own and don't reflect how others feel.
0=does not describe me well to 4=describes me very well

- ○ 0
- ○ 1
- ○ 2
- ○ 3
- ○ 4

Q33 I feel deeply for others.
0=does not describe me well to 4=describes me very well

- ○ 0
- ○ 1
- ○ 2
- ○ 3
- ○ 4

Q34-37 Please answer the level to which you agree with the following statements.

	Strongly agree	Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Disagree	Strongly disagree
I have considered leaving this school.	○	○	○	○	○	○	○
I have considered leaving education altogether.	○	○	○	○	○	○	○
I would leave this position for another job.	○	○	○	○	○	○	○
I am searching for a different full time job.	○	○	○	○	○	○	○

ONLY 3 PAGES OF QUESTIONS LEFT!

End of Block: Empathy Questions & Intent to Leave

Start of Block: ACE Questionnaire

The Maine Teacher Resilience Study

Continued

The following questions seek to understand your personal childhood adversity history. Due to their sensitive nature, the questions may or may not bring up painful memories.

There is a list of providers at the end of the survey if you feel the need to talk to someone to help you with these emotions.

All questions begin with the phrase

Prior to your 18th birthday:

Q38 Did a parent or other adult in the household **often or very** often…
Swear at you, insult you, put you down or humiliate you?
or
Act in a way that made you afraid that you might be physically hurt?

- ○ Yes
- ○ No

Q39 Did a parent or other adult in the household **often or very often**…
Push, grab, slap, or throw something at you?
or
Ever hit you so hard that you had marks or were injured?

- ○ Yes
- ○ No

Q40 Did an adult or person at least 5 years older than you **ever**…
Touch or fondle you or have you touch their body in a sexual way?
or
Attempt or actually have oral, anal, or vaginal intercourse with you?

- ○ Yes
- ○ No

Q41 Did you **often or very often** feel that…
No one in your family loved you or thought you were important or special?
or
Your family didn't look out for each other, feel close to each other, or support each other?

- ○ Yes
- ○ No

Q42 Did you **often or very often** feel that…
You didn't have enough to eat, had to wear dirty clothes, and had no one to protect you?
or
Your parents were drunk or high to take care of you or take you to the doctor if you needed it?

- ○ Yes
- ○ No

Q43 Was a biological parent **ever** lost to you through divorce, abandonment, or other reason?

- ○ Yes
- ○ No

Q44 Was your mother or stepmother:
Often or very often pushed, grabbed, slapped, or had something thrown at her?
or **Sometimes, often or very often kicked**, bitten, hit with a fist, or hit with something hard?
or **Ever** repeatedly hit over at least a few minutes or threatened with a gun or a knife?

- ○ Yes
- ○ No

Q45 Did you live with anyone who was a problem drinker or alcoholic, or who used street drugs?

- ○ Yes
- ○ No

Q46 Was a household member depressed or mentally ill, or did a household member attempt suicide?

- ○ Yes
- ○ No

Q47 Did a household member go to prison?

- ○ Yes
- ○ No

Q48 Did other kids, including brothers or sisters **often or very often** hit you, threaten you, pick on your or insult you?

- ○ Yes
- ○ No

Q49 Did you **often or very often** feel lonely, rejected or that nobody liked you?

- Yes
- No

Q50 Did you live for 2 or more years in a neighborhood that was dangerous, or where you saw people being assaulted

- Yes
- No

Q51 Was there a period of 2 or more years when your family was very poor on on public assistance?

- Yes
- No

ONLY 2 PAGES OF QUESTIONS LEFT!

End of Block: ACE Questionnaire

Start of Block: Resilience

Connor-Davidson Resilience Scale 10 (CD-RISC-10)

Q52-61 Omitted due to copyright

(SEE Campbell-Sills, L., & Stein, M. B. (2007). *Psychometric Analysis and Refinement of the Connor–Davidson Resilience Scale (CD-RISC): Validation of a 10-Item Measure of Resilience*. *20*(6), 1019–1028. https://doi.org/10.1002/jts)

JUST **ONE** MORE PAGE OF QUESTIONS!

End of Block: Resilience

Start of Block: ProQOL

The Maine Teacher Resilience Study
Continued

Professional Quality of Life Scale (ProQOL)
Compassion Satisfaction and Compassion Fatigue (ProQOL) Version 5 (2009)
When you teach people, you have direct contact with their lives. As you may have found, your compassion for those you teach can affect you in positive and negative ways. Below are some questions about your experiences, both positive and negative, as an educator. Consider each of the following questions about you and your current work situation. Select the number that honestly reflects how frequently you experienced these things in the last 30 days.

Q62 I am happy.

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Very Often

Q63 I am preoccupied with more than one person I educate.

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Very Often

Q64 I get satisfaction from being able to educate/help people.

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Very Often

Q65 I feel connected to others.

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Very Often

Q66 I jump or am startled by unexpected sounds.

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Very Often

Q67 I feel invigorated after working with those I educate/help.

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Very Often

Q68 I find it difficult to separate my personal life from my life as an educator.

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Very Often

Q69 I am not as productive at work because I am losing sleep over traumatic experiences of a person I educate/help.

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Very Often

Q70 I think that I might have been affected by the traumatic stress of those I educate/help.

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Very Often

Q71 I feel trapped by my job as an educator.

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Very Often

Q72 Because of my work as an educator, I have felt “on edge” about various things.

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Very Often

Q73 I like my work as an educator.

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Very Often

Q74 I feel depressed because of the traumatic experiences of the people I educate/help.

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Very Often

Q75 I feel as though I am experiencing the trauma of someone I have educated/helped.

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Very Often

Q76 I have beliefs that sustain me.

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Very Often

Q77 I am pleased with how I am able to keep up with education techniques and protocols.

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Very Often

Q78 I am the person I always wanted to be.

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Very Often

Q79 My work makes me feel satisfied.

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Very Often

Q80 I feel worn out because of my work as an educator.

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Very Often

Q81 I have happy thoughts and feelings about those I educate and how I could help them.

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Very Often

Q82 I feel overwhelmed because my work load seems endless.

- Never
- Rarely
- Sometimes
- Often
- Very Often

Q83 I believe I can make a difference through my work.

- Never
- Rarely
- Sometimes
- Often
- Very Often

Q84 I avoid certain activities or situations because they remind me of frightening experiences of the people I educate.

- Never
- Rarely
- Sometimes
- Often
- Very Often

Q85 I am proud of what I can do to educate/help.

- Never
- Rarely
- Sometimes
- Often
- Very Often

Q86 As a result of my work as an educator, I have intrusive, frightening thoughts.

- Never
- Rarely
- Sometimes
- Often
- Very Often

Q87 I feel “bogged down” by the system.

- Never
- Rarely
- Sometimes
- Often
- Very Often

Q88 I have thoughts that I am a “success” as an educator.

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Very Often

Q89 I can’t recall important parts of my work with trauma victims.

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Very Often

Q90 I am a very caring person.

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Very Often

Q91 I am happy that I chose to do this work.

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Very Often

ALMOST OVER! ONLY **ONE SHORT PAGE** LEFT!

The Maine Teacher Resilience Study
Continued

The following is a list of helpful resources if you feel as though you would like to talk further to someone. You can also reach the researcher at sherry.pineau@maine.edu.

Need to Talk?		
STATEWIDE RESOURCES		
Maine 211 Free and confidential referral service	Dial: **211** Text your Zip Code to **898-211** Email: info@211maine.org https://211maine.org/about/	24 hours, 7 days a week
Maine Warm Line Callers receive support, social connection, assistance with referrals to community resources, recovery programs and an opportunity to connect with others during a time of fear, grief, or sadness.	Dial: **1-866-771-9276 or 1-866-771-WARM**	24 hours, 7 days a week
Crisis Response Services Crisis and Counseling Centers offer a hotline for those in crisis	**Dial: 1-888-568-1112** **https://crisisandcounseling.org**	24 hours, 7 days a week
NAMI Maine Help Line (National Alliance on Mental Illness) The Helpline is a safe and confidential mental health service for peers, law enforcement, professionals, friends and family members.	**1-800-464-5767 & press "1"** https://www.namimaine.org/	Weekdays 8:00 am-4:00 pm
Contact Your Primary Care Provider*		

NATIONAL RESOURCES
Mental Health Services Locator http://store.samhsa.gov/mhlocator
National Sexual Assault Telephone Hotline, Toll-Free, 24-hour Hotline: 800-656-HOPE (4673) **Online chat:** https://hotline.rainn.org/online?_ga=2.215910935.1048948485.1571182996-1359152122.1571182996
National Domestic Violence Hotline: 1-800-799-7233 **Online chat:** https://www.thehotline.org/
National Suicide Prevention Lifeline, Toll-Free, 24-hour Hotline, 1-800-273-TALK (1-800-273-8255)

*May have costs associated

Thank you so much for taking time to complete the survey!

Your voice is so important in helping us to understand the experiences that teachers have in today's school. Please use the following space to share any thoughts, comments, or resources that you have on the topic of educator resilience in the State of Maine.

_____

THE MAINE TEACHER RESILIENCE STUDY RAFFLE FORM

Thank you so much for completing the survey. Please fill out the following information in order to be entered into the drawing for one of **25 Visa Gift Cards worth $20 each.**

You will be contacted by email if you are one of the lucky winners.

Please note that this information is in **NO WAY LINKED** to your survey responses.

Thank you again for your time, and **Good Luck!**

Name

_____

Email Address

_____

APPENDIX B. Distribution Communications

To view this email as a web page, go here.

Maine Education Association

Leading the Way to Great Public Schools for Every Maine Student

Dear MEA member,

You are invited to participate in a research study being conducted by Sherry Pineau Brown, an MEA member from Waterville who is a Ph.D. Candidate in the College of Education and Human Development at the University of Maine, Orono. The Board of Directors of the Maine Education Association, at a meeting this past fall, voted to distribute the survey for this study to the members of the MEA.

The purpose of this research is to understand the personal and professional factors that help teachers as they teach today's students, many of whom show signs of complex trauma and childhood adversity. You must be at least 18 years old to participate in this study. You must also be a current employee of either a public or private PreK-12 institution in the State of Maine.

The survey is anonymous and will take approximately 10 minutes to complete. If you agree to participate, please click on the following link (https://umaine.qualtrics.com/jfe/form/SV_4Jy5I1JSRZvayO1) to learn more about the study, to take the survey, and to be entered in a drawing to win one of 25 Visa Gift Cards worth $20 each.

If you have any questions about the survey, please feel free to contact Sherry at sherry.pineau@maine.edu or (207) 660-5613 or her faculty advisor Jim Artesani at arthur.artesani@maine.edu.

Your participation in this study would be greatly appreciated!

In Unity,

Grace Leavitt

Grace Leavitt, President
Maine Education Association

This email was sent by: **Maine Education Association**
35 Community Drive
Augusta, ME 04330

Maine Education Association

Leading the Way to Great Public Schools for Every Maine Student

Leading the Way To Great Public Schools for Every Maine Student

To view this email as a web page, go here.

Maine Education Association

Leading the Way to Great Public Schools for Every Maine Student

Dear MEA member,

You were recently invited to participate in a research study being conducted by Sherry Pineau Brown, an MEA member from Waterville who is a Ph.D. Candidate in the College of Education and Human Development at the University of Maine, Orono. The Board of Directors of the Maine Education Association, at a meeting this past fall, voted to distribute the survey for this study to the members of the MEA.

Thank you to those of you who have already taken the survey!

If you have not yet participated in the survey, it would be greatly appreciated if you could take time to do so now—it should take only ten minutes to complete!

The purpose of this research is to understand the personal and professional factors that help teachers as they teach today's students, many of whom show signs of complex trauma and childhood adversity. You must be at least 18 years old to participate in this study. You must also be a current employee of either a public or private PreK-12 institution in the State of Maine.

The survey is anonymous and, again, it will take approximately 10 minutes to complete. If you agree to participate, please click here to learn more about the study, to take the survey, and to be entered in a drawing to win one of 25 Visa Gift Cards worth $20 each.

If you have any questions about the survey, please feel free to contact Sherry at sherry.pineau@maine.edu or (207) 660-5613 or her faculty advisor Jim Artesani at arthur.artesani@maine.edu .

Thank you!

In Unity,

Grace Leavitt

Grace Leavitt, President
Maine Education Association

This email was sent by: **Maine Education Association**
35 Community Drive
Augusta, ME 04330

Maine Education Association

Leading the Way to Great Public Schools for Every Maine Student

APPENDIX C. Codebook

SPSS Name	Variable	Coding Instructions	Measurement Scale
Age	Age	Age in years	Scale
Q2	Gender	1 = Female 2= Male 3 = Gender non-binary	Nominal
Q3	Ethnicity	1 = Black/African American 2 = Hispanic/Latinx 3 = American Indian/Alaskan Native 4 = Asian 5 = Native Hawaiian/Other Pacific Islander 6 = White 7 = Two or More 8 = Prefer Not to Answer	Nominal
Q6	Role	1 = Classroom teacher 2 = Special Education Teacher 3 = English Language Learner Teacher 4 = Gifted and Talented (GT) Teacher 5 = Literacy Specialist 6 = Substitute Teacher — Longterm 7 = Title I Teacher	Nominal
Q7	Maine County	1 = Androscoggin 2 = Aroostook 3 = Cumberland 4 = Franklin 5 = Hancock 6= Kennebec 7 = Knox 8 = Lincoln 9 = Oxford 10 = Penobscot 11 = Piscataquis 12 = Sagadahoc 13 = Somerset 14 = Waldo 15 = Washington 16 = York	Nominal
YrsSchool	YrsSchool	Years at current school	Scale
Experience	Experience	Years of education experience	Scale
StACEs	StACEs	Percentage in numbers	Scale
Q10, Q11	TSS	0 = Not sure 1 = No 2 = Yes	Scale

SPSS Name	Variable	Coding Instructions	Measurement Scale
Q12, Q13, Q14, Q15, Q17, Q18	ORG Org Sup	0 = Not Applicable 1= Strongly disagree 2 = Disagree 3 = Agree 4 = Strongly agree	Scale
Q16*	ORG Org Sup* Rev. Coded	0 = Not Applicable 1 = Strongly agree 2 = Agree 3 = Disagree 4 = Strongly Disagree	Scale
Q19, Q20, Q21, Q22, Q23, Q24, Q25, Q26	REL Relational Support	1 = Almost None 2 = Few 3 = Some 4 = Most 5 = Nearly All	Scale
Q27, Q30, Q31, Q33	EMP Empathy	1 = does not describe me well 2 3 4 5 = describes me very well	
Q28, Q29, Q32	EMP Empathy	1 = describes me very well 2 3 4 5 = does not describe me well	
Q34_37_1 Q34_37_2 Q34_37_3 Q34_37_4	LEAVE	1 = Strongly disagree 2 = Disagree 3 = Somewhat disagree 4 = Neither agree and disagree 5 = Somewhat agree 6 = Agree 7 = Strongly agree	Scale
Q38, Q39, Q40, Q41, Q42, Q43, Q44, Q45, Q46, Q47, Q48, Q49, Q50, Q51	ACEs Personal ACEs	0 = No 1 = Yes	Scale
Q63, Q66, Q68, Q70, Q72, Q74, Q75, Q84, Q86, Q89	STS Sec Tr Stress	1 = Never 2 = Rarely 3 = Sometimes 4 = Often 5 = Very Often	Scale

SPSS Name	Variable	Coding Instructions	Measurement Scale
Q64, Q67, Q73, Q77, Q79, Q81, Q83, Q85, Q88, Q91	CS Compassion Satisfaction	1 = Never 2 = Rarely 3 = Sometimes 4 = Often 5 = Very Often	Scale
Q69, Q71, Q80, Q82, Q87	BO Burnout	1 = Never 2 = Rarely 3 = Sometimes 4 = Often 5 = Very Often	Scale
Q62*, Q65*, Q76*, Q78*, Q90*	BO Burnout* Rev Coded	1 = Very Often 2 = Often 3 = Sometimes 4 = Rarely 5 = Never	Scale

APPENDIX D. Brief-California School Climate Survey and Internal Consistency

Table D.1

Organizational Supports and Internal Consistency

Item	*M*	*SD*	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
This school is a supportive and inviting place for students to learn.	3.33	.548	.566	.807
This school sets high standards for academic performance for all students	3.04	.702	.637	.792
This school promotes academic success for all students.	3.16	.649	.669	.789
This school clearly communicates to students the consequences of breaking school rules.	2.65	.814	.592	.800
The school fails to involve most parents in school events or activities.	3.11	.731	.357	.837
This school is a supportive and inviting place for staff to work.	2.96	.794	.580	.802
This school handles discipline problems fairly.	2.62	.777	.644	.790

Note. N = 538, M = 20.88, SD = 3.53. Scale from "Preliminary Development of the Brief-California School Climate Survey: Dimensionality and Measurement Invariance Across Teachers and Administrators," by S. You, M. D. O'Malley, and M. J. Furlong, 2014, *School Effectiveness and School Improvement*, *25*(1), p.p. 153–173. (https://doi.org/10.1080/09243453.2013.784199).

Table D.2

Relational Supports Internal Consistency

Item	*M*	*SD*	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
How many adults at this school really care about all students?	4.55	.597	.732	.876
How many adults at this school acknowledge and pay attention to students?	4.52	.595	.705	.878
How many adults at this school want all students to do their best?	4.60	.547	.731	.877
How many adults at this school listen to what students have to say?	4.11	.678	.698	.878
How many adults at this school believe that every student can be a success?	4.12	.681	.706	.877
How many adults at this school treat all students fairly?	4.11	.634	.680	.880
How many adults at this school support and treat each other with respect?	4.13	.744	.604	.888
How many adults at this school feel a responsibility to improve this school?	3.84	.852	.618	.890

Note. N = 538, M = 33.97*, SD* = 4.07. Scale from "Preliminary Development of the Brief-California School Climate Survey: Dimensionality and Measurement Invariance Across Teachers and Administrators," by S. You, M. D. O'Malley, and M. J. Furlong, 2014, *School Effectiveness and School Improvement*, *25*(1), p.p. 153–173. (https://doi.org/10.1080/09243453.2013.784199).

APPENDIX E. Professional Quality of Life Scale and Internal Consistency

Table E.1

Burnout Internal Consistency

Item	*M*	*SD*	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I am happy.	1.81	.764	.581	.806
I feel connected to others.	1.85	.814	.475	.814
I am not as productive at work because I am losing sleep over traumatic experiences of a person I educate/help.	1.99	.832	.352	.825
I feel trapped by my job as an educator.	2.28	1.184	.681	.790
I have beliefs that sustain me.	1.78	.893	.304	.830
I am the person I always wanted to be.	2.25	.796	.534	.809
I feel worn out because of my work as an educator.	3.58	1.062	.658	.794
I feel overwhelmed because my work load seems endless.	3.51	1.085	.615	.799
I feel “bogged down” by the system.	3.38	1.065	.657	.794
I am a very caring person.	1.52	.628	.223	.833

Note. N = 530, *M* = 23.95, *SD* = 5.79. From *Professional Quality of Life: Compassion Satisfaction and Fatigue Version 5 (ProQOL)* by B.H. Stamm, 2009, (www.isu.edu/~bhstamm or www.proqol.org).

Table E.2

Secondary Traumatic Stress Internal Consistency

Item	*M*	*SD*	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I am preoccupied with more than one person I educate.	3.42	1.122	.361	.801
I jump or am startled by unexpected sounds.	2.82	1.021	.252	.812
I find it difficult to separate my personal life from my life as an educator.	2.69	1.120	.435	.791
I think that I might have been affected by the traumatic stress of those I educate/help.	2.37	.968	.667	.761
Because of my work as an educator, I have felt "on edge" about various things.	2.73	1.063	.605	.768
I feel depressed because of the traumatic experiences of the people I educate/help.	2.16	.854	.634	.768
I feel as though I am experiencing the trauma of someone I have educated/helped.	1.79	.853	.649	.767
I avoid certain activities or situations because they remind me of frightening experiences of the people I educate.	1.48	.771	.451	.788
As a result of my work as an educator, I have intrusive, frightening thoughts.	1.52	.745	.631	.772
I can't recall important parts of my work with trauma victims.	1.77	.834	.219	.810

Note. N = 513, *M* = 22.75, *SD* = 5.66. *Note.* N = 530, *M* = 23.95, *SD* = 5.79. From *Professional Quality of Life: Compassion Satisfaction and Fatigue version 5 (ProQOL)* by B.H. Stamm, 2009, (www.isu.edu/~bhstamm or www.proqol.org).

Table E.3

Compassion Satisfaction Internal Consistency

Item	*M*	*SD*	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I get satisfaction from being able to educate/help people.	4.55	.646	.642	.907
I feel invigorated after working with those I educate/help.	3.87	.876	.647	.907
I like my work as an educator.	4.34	.714	.770	.899
I am pleased with how I am able to keep up with education techniques and protocols.	3.70	.912	.507	.916
My work makes me feel satisfied.	3.96	.835	.775	.898
I have happy thoughts and feelings about those I educate and how I could help them.	4.02	.725	.685	.904
I believe I can make a difference through my work.	4.15	.754	.712	.902
I am proud of what I can do to educate/help.	4.30	.722	.758	.900
I have thoughts that I am a "success" as an educator.	3.73	.835	.642	.907
I am happy that I chose to do this work.	4.20	.775	.744	.900

Note. N = 535, *M* = 40.80, *SD* = 5.86. *Note.* N = 530, *M* = 23.95, *SD* = 5.79. From *Professional Quality of Life: Compassion Satisfaction and Fatigue version 5 (ProQOL)* by B.H. Stamm, 2009, (www.isu.edu/~bhstamm or www.proqol.org).

APPENDIX F. The Connor-Davidson Resilience Scale 10 and Internal Consistency

Table F.1

The CD-RISC-10 Resilience Scale Internal Consistency

Item #	*M*	*SD*	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Item 1	3.348	.726	.652	.856
Item 2	3.288	.698	.679	.855
Item 3	2.839	.912	.460	.872
Item 4	2.730	.861	.555	.863
Item 5	3.323	.736	.589	.861
Item 6	3.268	.697	.617	.859
Item 7	2.946	.786	.626	.857
Item 8	2.693	.932	.545	.865
Item 9	3.322	.735	.677	.854
Item 10	3.081	.815	.600	.860

Note. $N = 541$, $M = 30.84$, $SD = 5.42$. Specific items not listed due to copyright. From "Psychometric Analysis and Refinement of the Connor–Davidson Resilience Scale (CD-RISC): Validation of a 10-Item Measure of Resilience" by L. Campbell-Sills and M. B. Stein, 2007, *Journal of Traumatic Stress. 20*(6), 1019–1028. (https://doi.org/10.1002/jts). Used with permission.

APPENDIX G. General Empathy Scale and Internal Consistency

Table G.1

Seven-Item General Empathy Scale Internal Consistency

	M	*SD*	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I find that I am "in tune" with other people's moods	4.34	.645	.420	.634
I am not really interested in how other people feel.	4.41	.962	.383	.636
I don't give others' feelings much thought.	4.57	.769	.461	.618
I always try to tune in to the feelings of those around me.	4.08	.900	.479	.608
It's easy for me to get carried away by other people's emotions.	2.86	1.094	.306	.665
My feelings are my own and don't reflect how others feel.	2.61	1.076	.205	.696
I feel deeply for others.	4.20	.830	.534	.596

Note. $N = 534$, $M = 27.07$, $SD = 3.69$. From “Empathizing With Others’ Pain Versus Empathizing with Others’ Joy: Examining the Separability of Positive and Negative Empathy and Their Relation to Different Types of Social Behaviors and Social Emotions” by M. R. Andreychik and N. Migliaccio, 2015, *Basic and Applied Social Psychology*, *37*(5), p.p 274–291. (https://doi.org/10.1080/01973533.2015.1071256).

Table G.2

Five-Item General Empathy Scale and Internal Consistency

Item	*M*	*SD*	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I find that I am "in tune" with other people's moods.	4.34	.644	.486	.688
I am not really interested in how other people feel.	4.41	.962	.427	.712
I don't give others' feelings much thought.	4.57	.767	.522	.670
I always try to tune in to the feelings of those around me.	4.08	.904	.501	.677
I feel deeply for others.	4.20	.830	.541	.660

Note. $N = 537$, $M = 21.61$, $SD = 2.87$. Adapted from "Empathizing With Others' Pain Versus Empathizing with Others' Joy: Examining the Separability of Positive and Negative Empathy and Their Relation to Different Types of Social Behaviors and Social Emotions" by M. R. Andreychik and N. Migliaccio, 2015, *Basic and Applied Social Psychology*, *37*(5), p.p 274–291. (https://doi.org/10.1080/01973533.2015.1071256)

APPENDIX H. Intent to Leave and Internal Consistency

Table H.1

Intent to Leave and Internal Consistency

Item	*M*	*SD*	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I have considered leaving this school.	4.10	2.218	.755	.809
I have considered leaving education altogether.	4.09	2.238	.650	.855
I would leave this position for another job.	3.82	1.961	.767	.805
I am searching for a different full-time job.	2.52	1.803	.699	.835

Note. $N = 539$, $M = 14.53$, $SD = 6.95$. Adapted from "The Effect of Mandatory Furloughs on Self-determination, Financial Strain, and Decision to Leave the California State University System in Social Work Faculty" by M. Hohman, T. Packard, D. Finnegan , and L. Jones, 2013, *Journal of Social Work Education*, *49*(4), p.p. 748–759. (https://doi.org/10.1080/10437797.2013.812907).

APPENDIX I. Teacher ACEs Frequency Tables

Table I.1

Teacher Traditional Adverse Childhood Experiences Frequency Table

ACEs Score	Frequency	Percent	Valid Percent	Cumulative Percent
.00	222	41.0	41.0	41.0
1.00	99	18.3	18.3	59.2
2.00	75	13.8	13.8	73.1
2.22	1	.2	.2	73.2
3.00	48	8.9	8.9	82.1
4.00	42	7.7	7.7	89.9
5.00	22	4.1	4.1	93.9
6.00	14	2.6	2.6	96.5
7.00	12	2.2	2.2	98.7
8.00	3	.6	.6	99.3
9.00	3	.6	.6	99.8
10.00	1	.2	.2	100.0
Total	542	100.0	100.0	

Note. Scale used from "Relationship of Childhood Abuse and Household Dysfunction to Many of the Leading Causes of Death in Adults. The Adverse Childhood Experiences (ACE) study" by V. J. Felitti, R. F. Anda, D. Nordenberg, D. F. Williamson, A. M. Spitz, V. Edwards, M. P. Koss, and J. S. Marks, 1998, *American Journal of Preventive Medicine*, *14*(4), p.p. 245–258. (https://doi.org/http://dx.doi.org/10.1016/S0749-3797(98)00017-8).

Table I.2

Teacher Expanded Adverse Childhood Experiences Frequency Table

ACEs Score	Frequency	Percent	Valid Percent	Cumulative Percent
.0000	194	35.8	35.8	35.8
1.0000	91	16.8	16.8	52.6
1.0769	1	.2	.2	52.8
2.0000	46	8.5	8.5	61.3
2.1538	1	.2	.2	61.4
3.0000	59	10.9	10.9	72.3
4.0000	45	8.3	8.3	80.6
5.0000	26	4.8	4.8	85.4
6.0000	31	5.7	5.7	91.1
7.0000	19	3.5	3.5	94.6
8.0000	11	2.0	2.0	96.7
9.0000	4	.7	.7	97.4
10.0000	7	1.3	1.3	98.7
11.0000	3	.6	.6	99.3
12.0000	2	.4	.4	99.6
13.0000	1	.2	.2	99.8
14.0000	1	.2	.2	100.0
Total	542	100.0	100.0	

Note. Scale from "A Revised Inventory of Adverse Childhood Experiences" by D. Finkelhor, A. Shattuck, H. Turner, and S. Hamby, 2015, *Child Abuse and Neglect*, *48*, p.p. 13–21. (https://doi.org/10.1016/j.chiabu.2015.07.011).

APPENDIX J. Student ACEs Frequency Table

Table J.1

Perceived Percentage of Student Caseload with Adverse Childhood Experiences

Percentage of Students	Frequency	Percent	Valid Percent	Cumulative Percent
.00 – 10.00	52	9.9	10.2	10.1
11.00 – 20.00	59	10.9	11.5	21.6
21.00 – 30.00	65	12.1	12.6	34.2
31.00 – 40.00	47	8.7	9.1	43.3
41.00 – 50.00	96	17.8	18.7	61.9
51.00 – 60.00	40	7.4	7.8	69.7
61.00 – 70.00	37	6.9	7.2	76.9
71.00 – 80.00	59	10.9	11.5	88.3
81.00 – 90.00	21	4	4.1	92.4
91.00 – 100.00	39	7.3	7.6	100.0
Total	515	95.0	100.0	
Missing	27	5.0		
System Total	542	100.0		

APPENDIX K. SPSS Syntax for Variable Calculations

SPSS Syntax for Variable Summary Scores

```
Compute LEAVE=MEAN.4(Q34_37_1, Q34_37_2, Q34_37_3, Q34_37_4).
compute LEAVE=LEAVE*4.
Execute.
Compute ExpACEs=MEAN.12(Q38, Q39, Q40, Q41, Q42, Q43, Q44, Q45, Q46, Q47, Q48,
Q49, Q50, Q51).
compute ExpACEs=ExpACEs*14.
Variable labels ExpACEs "Expanded ACEs".
Execute.
Compute RES=MEAN.8(Q52, Q53, Q54, Q55, Q56, Q57, Q58, Q59, Q60, Q61).
compute RES=RES*10.
Variable labels RES "Resilience".
Execute.
Compute BO=MEAN.8(Q62, Q65, Q69, Q71, Q76, Q78, Q80, Q82, Q87, Q90).
compute BO=BO*10.
Variable labels BO "Burnout".
Execute.
Compute STS=MEAN.8(Q63, Q66, Q68, Q70, Q72, Q74, Q75, Q84, Q86, Q89).
compute STS=STS*10.
Variable labels STS "Sec Tr Stress".
Execute.
Compute CS=MEAN.8(Q64, Q67, Q73, Q77, Q79, Q81, Q83, Q85, Q88, Q91).
compute CS=CS*10.
Variable labels CS "Compassion Satisfaction".
Execute.
Compute EMP=MEAN.6(Q27, Q28, Q29, Q30, Q31, Q32, Q33).
compute EMP=EMP*7.
Variable labels EMP "Empathy".
Execute.
Compute ORG=MEAN.6(Q12, Q13, Q14, Q15, Q16, Q17, Q18).
compute ORG=ORG*7.
Variable labels ORG "Org Sup".
Execute.
Compute RELA=MEAN.7(Q19, Q20, Q21, Q22, Q23, Q24, Q25, Q26).
compute RELA=RELA*8.
Variable labels RELA "Relational Sup".
Execute.
Compute RES=MEAN.8(Q52, Q53, Q54, Q55, Q56, Q57, Q58, Q59, Q60, Q61).
compute RES=RES*10.
Variable labels RES "Resilience".
Execute.
Compute TradACE=MEAN.8(Q38, Q39, Q40, Q41, Q42, Q43, Q44, Q45, Q46, Q47).
compute TradACE=TradACE*10.
```

```
Variable labels TradACE "Traditional ACE Score".
Execute.
Compute EMP5=MEAN.4(Q27, Q28, Q29, Q30, Q33).
compute EMP5=EMP5*5.
Variable labels EMP5 "Empathy (5 Item)".
Execute.
```

APPENDIX L. AMOS Text Output for Measurement Model 1

Analysis Summary; Groups; Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.
Sample size = 542
Variable Summary (Group number 1)

Your model contains the following variables (Group number 1)
Observed, endogenous variables
RES
CS
ORG
REL
BO
STS
LEAVE

Observed, exogenous variables
StACEs
PerACEs
EMP

Unobserved, exogenous variables
e2
e1
SC
e4
e3
CTC
e7
e6
e5
PF

Variable counts (Group number 1)

Number of variables in your model:	20
Number of observed variables:	10
Number of unobserved variables:	10
Number of exogenous variables:	13
Number of endogenous variables:	7

Parameter Summary (Group number 1)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	10	0	0	10	0	20
Labeled	0	0	0	0	0	0
Unlabeled	4	16	13	3	7	43
Total	14	16	13	13	7	63

Models
Default model (Default model)
Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments:	65
Number of distinct parameters to be estimated:	43
Degrees of freedom (65 - 43):	22

Result (Default model)
Minimum was achieved
Chi-square = 197.251
Degrees of freedom = 22
Probability level = .000

Group number 1 (Group number 1 - Default model)
Estimates (Group number 1 - Default model)
Scalar Estimates (Group number 1 - Default model)
Maximum Likelihood Estimates

Regression Weights: (Group number 1 - Default model)

			Estimate	**S.E.**	**C.R.**	**P**	**Label**
ORG	<---	SC	1.000				
REL	<---	SC	.751	.097	7.711	***	par_1
BO	<---	CTC	1.000				
STS	<---	CTC	.532	.046	11.615	***	par_2
LEAVE	<---	CTC	.495	.035	14.209	***	par_3
CS	<---	PF	2.977	.260	11.445	***	par_18
RES	<---	PF	1.000				

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
ORG	<---	SC	.938
REL	<---	SC	.614
BO	<---	CTC	.909
STS	<---	CTC	.487
LEAVE	<---	CTC	.650
CS	<---	PF	.850
RES	<---	PF	.530

Means: (Group number 1 - Default model)

	Estimate	**S.E.**	**C.R.**	**P**	**Label**
PerACEs	2.344	.117	20.076	***	par_28
EMP	21.597	.123	175.615	***	par_29
StACEs	47.917	1.199	39.980	***	par_30

Intercepts: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
RES	30.829	.233	132.489	***	par_21
CS	49.954	.432	115.512	***	par_22
ORG	20.882	.153	136.608	***	par_23
REL	34.003	.175	193.917	***	par_24
BO	50.033	.433	115.504	***	par_25
STS	50.050	.430	116.362	***	par_26
LEAVE	14.537	.300	48.450	***	par_27

Covariances: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
PF	<-->	CTC	-24.184	2.626	-9.209	***	par_7
PF	<-->	SC	3.929	.607	6.473	***	par_8
SC	<-->	CTC	-14.028	1.697	-8.267	***	par_16
e7	<-->	e6	17.342	3.774	4.594	***	par_4
StACEs	<-->	PF	-5.210	4.025	-1.294	.196	par_5
StACEs	<-->	PerACEs	16.730	3.298	5.072	***	par_6
EMP	<-->	PF	2.567	.464	5.531	***	par_9
StACEs	<-->	CTC	28.699	12.322	2.329	.020	par_10
EMP	<-->	CTC	-5.666	1.273	-4.451	***	par_11
EMP	<-->	SC	2.019	.444	4.544	***	par_12
StACEs	<-->	SC	-15.714	4.357	-3.606	***	par_13
StACEs	<-->	EMP	5.384	3.436	1.567	.117	par_14
PerACEs	<-->	EMP	-.182	.334	-.546	.585	par_15
PerACEs	<-->	SC	-1.273	.418	-3.045	.002	par_17
PerACEs	<-->	CTC	5.472	1.217	4.498	***	par_19
PerACEs	<-->	PF	-1.062	.407	-2.608	.009	par_20

Correlations: (Group number 1 - Default model)

			Estimate
PF	<-->	CTC	-.922
PF	<-->	SC	.411
SC	<-->	CTC	-.460
e7	<-->	e6	.474
StACEs	<-->	PF	-.067
StACEs	<-->	PerACEs	.226
EMP	<-->	PF	.313
StACEs	<-->	CTC	.115
EMP	<-->	CTC	-.217
EMP	<-->	SC	.212
StACEs	<-->	SC	-.173
StACEs	<-->	EMP	.069
PerACEs	<-->	EMP	-.023
PerACEs	<-->	SC	-.141
PerACEs	<-->	CTC	.220
PerACEs	<-->	PF	-.136

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
SC	11.092	1.517	7.313	***	par_31
CTC	83.672	7.460	11.217	***	par_32
PF	8.224	1.357	6.060	***	par_33
e2	21.069	1.397	15.081	***	par_34
e1	28.046	4.934	5.684	***	par_35
e4	1.522	1.311	1.161	.246	par_36
e3	10.354	.971	10.662	***	par_37
e7	17.590	4.308	4.083	***	par_38
e6	76.244	5.397	14.128	***	par_39
e5	28.022	1.985	14.117	***	par_40
StACEs	740.937	46.168	16.049	***	par_41
PerACEs	7.372	.448	16.447	***	par_42
EMP	8.182	.497	16.447	***	par_43

Matrices (Group number 1 - Default model)

Total Effects (Group number 1 - Default model)

	CTC	SC	PF
LEAVE	.495	.000	.000
STS	.532	.000	.000
BO	1.000	.000	.000
REL	.000	.751	.000
ORG	.000	1.000	.000
CS	.000	.000	2.977
RES	.000	.000	1.000

Standardized Total Effects (Group number 1 - Default model)

	CTC	SC	PF
LEAVE	.650	.000	.000
STS	.487	.000	.000
BO	.909	.000	.000
REL	.000	.614	.000
ORG	.000	.938	.000
CS	.000	.000	.850
RES	.000	.000	.530

Direct Effects (Group number 1 - Default model)

	CTC	SC	PF
LEAVE	.495	.000	.000
STS	.532	.000	.000
BO	1.000	.000	.000
REL	.000	.751	.000
ORG	.000	1.000	.000
CS	.000	.000	2.977
RES	.000	.000	1.000

Standardized Direct Effects (Group number 1 - Default model)

	CTC	SC	PF
LEAVE	.650	.000	.000
STS	.487	.000	.000
BO	.909	.000	.000
REL	.000	.614	.000
ORG	.000	.938	.000
CS	.000	.000	.850
RES	.000	.000	.530

Indirect Effects (Group number 1 - Default model)

	CTC	SC	PF
LEAVE	.000	.000	.000
STS	.000	.000	.000
BO	.000	.000	.000
REL	.000	.000	.000
ORG	.000	.000	.000
CS	.000	.000	.000
RES	.000	.000	.000

Standardized Indirect Effects (Group number 1 - Default model)

	CTC	SC	PF
LEAVE	.000	.000	.000
STS	.000	.000	.000
BO	.000	.000	.000
REL	.000	.000	.000
ORG	.000	.000	.000
CS	.000	.000	.000
RES	.000	.000	.000

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	43	197.251	22	.000	8.966
Saturated model	65	.000	0		
Independence model	10	1644.170	55	.000	29.894

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.880	.700	.892	.724	.890
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.400	.352	.356
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	175.251	134.032	223.943
Saturated model	.000	.000	.000
Independence model	1589.170	1460.543	1725.173

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	.365	.324	.248	.414
Saturated model	.000	.000	.000	.000
Independence model	3.039	2.937	2.700	3.189

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.121	.106	.137	.000
Independence model	.231	.222	.241	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	283.251	285.036		
Saturated model	130.000	132.698		
Independence model	1664.170	1664.585		

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	.524	.447	.614	.527
Saturated model	.240	.240	.240	.245
Independence model	3.076	2.838	3.327	3.077

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	94	111
Independence model	25	28

Execution time summary

Minimization:	.081
Miscellaneous:	.927
Bootstrap:	.000
Total:	1.008

APPENDIX M. AMOS Text Output for Final Measurement Model

Analysis Summary; Groups; Group number 1 (Group number 1)
Notes for Group (Group number 1)

The model is recursive.
Sample size = 542

Variable Summary (Group number 1)
Your model contains the following variables (Group number 1)
Observed, endogenous variables
RES
CS
ORG
REL
Observed, exogenous variables
EMP
BO
PerACEs
StACEs
Unobserved, exogenous variables
e2
e1
SC
e4
e3
PF

Variable counts (Group number 1)

Number of variables in your model:	14
Number of observed variables:	8
Number of unobserved variables:	6
Number of exogenous variables:	10
Number of endogenous variables:	4

Parameter Summary (Group number 1)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	6	0	0	6	0	12
Labeled	0	0	0	0	0	0
Unlabeled	2	15	10	4	4	35
Total	8	15	10	10	4	47

Models
Default model (Default model)
Notes for Model (Default model)
Computation of degrees of freedom (Default model)

Number of distinct sample moments:	44
Number of distinct parameters to be estimated:	35
Degrees of freedom (44 - 35):	9

Result (Default model)

Minimum was achieved
Chi-square = 19.124
Degrees of freedom = 9
Probability level = .024
Group number 1 (Group number 1 - Default model)

Estimates (Group number 1 - Default model)
Scalar Estimates (Group number 1 - Default model)
Maximum Likelihood Estimates

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
ORG	<---	SC	1.000				
REL	<---	SC	.817	.105	7.786	***	par_1
CS	<---	PF	2.814	.232	12.121	***	par_17
RES	<---	PF	1.000				

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
ORG	<---	SC	.900
REL	<---	SC	.640
CS	<---	PF	.826
RES	<---	PF	.545

Means: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
BO	50.043	.435	115.155	***	par_22
PerACEs	2.344	.117	20.076	***	par_23
EMP	21.597	.123	175.615	***	par_24
StACEs	47.911	1.198	39.977	***	par_25

Intercepts: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
RES	30.829	.233	132.490	***	par_18
CS	49.954	.432	115.521	***	par_19
ORG	20.880	.153	136.600	***	par_20
REL	34.003	.175	193.918	***	par_21

Covariances: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
PF	<-->	SC	4.079	.621	6.572	***	par_2
EMP	<-->	PF	2.682	.478	5.610	***	par_3
BO	<-->	PerACEs	5.792	1.220	4.749	***	par_4
PerACEs	<-->	SC	-1.294	.414	-3.128	.002	par_5
StACEs	<-->	SC	-15.950	4.312	-3.699	***	par_6
EMP	<-->	StACEs	5.361	3.436	1.560	.119	par_7
BO	<-->	StACEs	30.775	12.352	2.491	.013	par_8
StACEs	<-->	PF	-5.386	4.220	-1.276	.202	par_9
PerACEs	<-->	StACEs	16.722	3.298	5.070	***	par_10
BO	<-->	SC	-12.201	1.675	-7.285	***	par_11
EMP	<-->	BO	-4.929	1.263	-3.902	***	par_12
EMP	<-->	SC	2.024	.440	4.598	***	par_13
EMP	<-->	PerACEs	-.182	.334	-.546	.585	par_14
PerACEs	<-->	PF	-1.143	.425	-2.688	.007	par_15
BO	<-->	PF	-25.784	2.628	-9.811	***	par_16

Correlations: (Group number 1 - Default model)

			Estimate
PF	<-->	SC	.433
EMP	<-->	PF	.318
BO	<-->	PerACEs	.211
PerACEs	<-->	SC	-.149
StACEs	<-->	SC	-.183
EMP	<-->	StACEs	.069
BO	<-->	StACEs	.112
StACEs	<-->	PF	-.067
PerACEs	<-->	StACEs	.226
BO	<-->	SC	-.378
EMP	<-->	BO	-.171
EMP	<-->	SC	.221
EMP	<-->	PerACEs	-.023
PerACEs	<-->	PF	-.143
BO	<-->	PF	-.866

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
SC	10.207	1.427	7.152	***	par_26
PF	8.698	1.385	6.280	***	par_27
e2	20.595	1.372	15.011	***	par_28
e1	32.071	4.592	6.985	***	par_29
e4	2.406	1.217	1.977	.048	par_30
e3	9.808	1.002	9.784	***	par_31
EMP	8.182	.497	16.447	***	par_32
BO	101.858	6.283	16.212	***	par_33
PerACEs	7.372	.448	16.447	***	par_34
StACEs	740.924	46.167	16.049	***	par_35

Matrices (Group number 1 - Default model)
Total Effects (Group number 1 - Default model)

	SC	PF
REL	.817	.000
ORG	1.000	.000
CS	.000	2.814
RES	.000	1.000

Standardized Total Effects (Group number 1 - Default model)

	SC	PF
REL	.640	.000
ORG	.900	.000
CS	.000	.826
RES	.000	.545

Direct Effects (Group number 1 - Default model)

	SC	PF
REL	.817	.000
ORG	1.000	.000
CS	.000	2.814
RES	.000	1.000

Standardized Direct Effects (Group number 1 - Default model)

	SC	PF
REL	.640	.000
ORG	.900	.000
CS	.000	.826
RES	.000	.545

Indirect Effects (Group number 1 - Default model)

	SC	PF
REL	.000	.000
ORG	.000	.000
CS	.000	.000
RES	.000	.000

Standardized Indirect Effects (Group number 1 - Default model)

	SC	PF
REL	.000	.000
ORG	.000	.000
CS	.000	.000
RES	.000	.000

Model Fit Summary
CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	35	19.124	9	.024	2.125
Saturated model	44	.000	0		
Independence model	8	961.272	36	.000	26.702

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.980	.920	.989	.956	.989
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.250	.245	.247
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	10.124	1.213	26.746
Saturated model	.000	.000	.000
Independence model	925.272	827.897	1030.048

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	.035	.019	.002	.049
Saturated model	.000	.000	.000	.000
Independence model	1.777	1.710	1.530	1.904

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.046	.016	.074	.557
Independence model	.218	.206	.230	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	89.124	90.309		
Saturated model	88.000	89.489		
Independence model	977.272	977.543		

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	.165	.148	.195	.167
Saturated model	.163	.163	.163	.165
Independence model	1.806	1.626	2.000	1.807

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	479	613
Independence model	29	33

Execution time summary
Minimization: .030
Miscellaneous: .501
Bootstrap: .000
Total: .531

APPENDIX N. AMOS Text Output for Structural Model

Groups
Group number 1 (Group number 1)

Notes for Group (Group number 1)
The model is recursive.
Sample size = 542

Variable Summary (Group number 1)
Your model contains the following variables (Group number 1)

Observed, endogenous variables
RES
CS
ORG
REL
EMP
BO

Observed, exogenous variables
StACEs
PerACEs

Unobserved, endogenous variables
TPF
SC

Unobserved, exogenous variables
e2
e3
e5
e4
d1
e6
d2
e1

Variable counts (Group number 1)

Number of variables in your model:	18
Number of observed variables:	8
Number of unobserved variables:	10
Number of exogenous variables:	10
Number of endogenous variables:	8

Parameter Summary (Group number 1)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	10	0	0	8	2	20
Labeled	0	0	0	0	0	0
Unlabeled	15	1	10	2	6	34
Total	25	1	10	10	8	54

Models
Default model (Default model)
Notes for Model (Default model)
Computation of degrees of freedom (Default model)

Number of distinct sample moments:	44
Number of distinct parameters to be estimated:	34
Degrees of freedom (44 - 34):	10

Result (Default model)
Minimum was achieved
Chi-square = 19.129
Degrees of freedom = 10
Probability level = .039

Group number 1 (Group number 1 - Default model)
Estimates (Group number 1 - Default model)
Scalar Estimates (Group number 1 - Default model)
Maximum Likelihood Estimates

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
EMP	<---	PerACEs	-.043	.046	-.934	.350	par_13
EMP	<---	StACEs	.008	.005	1.731	.083	par_15
SC	<---	EMP	.258	.051	5.088	***	par_3
SC	<---	PerACEs	-.122	.055	-2.232	.026	par_8
SC	<---	StACEs	-.021	.006	-3.649	***	par_14
TPF	<---	EMP	.242	.053	4.575	***	par_10
TPF	<---	PerACEs	-.089	.053	-1.678	.093	par_11
TPF	<---	SC	.340	.065	5.223	***	par_16
RES	<---	TPF	1.000				
CS	<---	TPF	2.814	.232	12.126	***	par_1
ORG	<---	SC	1.000				
REL	<---	SC	.816	.104	7.839	***	par_2
BO	<---	SC	-.007	.151	-.049	.961	par_4
BO	<---	EMP	.396	.129	3.075	.002	par_5
BO	<---	StACEs	.009	.011	.814	.415	par_6
BO	<---	TPF	-3.038	.299	-10.170	***	par_7
BO	<---	PerACEs	.302	.126	2.397	.017	par_12

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
EMP	<---	PerACEs	-.041
EMP	<---	StACEs	.078
SC	<---	EMP	.231
SC	<---	PerACEs	-.104
SC	<---	StACEs	-.175
TPF	<---	EMP	.234
TPF	<---	PerACEs	-.082
TPF	<---	SC	.369
RES	<---	TPF	.545
CS	<---	TPF	.826
ORG	<---	SC	.900
REL	<---	SC	.640
BO	<---	SC	-.002
BO	<---	EMP	.112
BO	<---	StACEs	.025
BO	<---	TPF	-.888
BO	<---	PerACEs	.081

Means: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
PerACEs	2.344	.117	20.076	***	par_22
StACEs	47.912	1.198	39.981	***	par_24

Intercepts: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
EMP	21.305	.259	82.294	***	par_23
RES	24.357	1.191	20.449	***	par_17
CS	31.739	3.115	10.188	***	par_18
ORG	16.580	1.123	14.768	***	par_19
REL	30.495	1.013	30.095	***	par_20
BO	60.035	3.229	18.592	***	par_21

Covariances: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
StACEs	<-->	PerACEs	16.724	3.298	5.071	***	par_9

Correlations: (Group number 1 - Default model)

			Estimate
StACEs	<-->	PerACEs	.226

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
StACEs	740.932	46.167	16.049	***	par_25
PerACEs	7.372	.448	16.447	***	par_26
e1	8.130	.494	16.442	***	par_27
d2	9.209	1.393	6.609	***	par_28
d1	6.559	1.102	5.954	***	par_29
e2	20.597	1.372	15.014	***	par_30
e3	32.059	4.589	6.987	***	par_31
e5	2.394	1.207	1.983	.047	par_32
e4	9.816	.998	9.839	***	par_33
e6	23.367	5.095	4.586	***	par_34

Matrices (Group number 1 - Default model)

Total Effects (Group number 1 - Default model)

	PerACEs	StACEs	EMP	SC	TPF
EMP	-.043	.008	.000	.000	.000
SC	-.134	-.018	.258	.000	.000
TPF	-.145	-.004	.329	.340	.000
BO	.727	.026	-.607	-1.040	-3.038
REL	-.109	-.015	.211	.816	.000
ORG	-.134	-.018	.258	1.000	.000
CS	-.409	-.012	.927	.957	2.814
RES	-.145	-.004	.329	.340	1.000

Standardized Total Effects (Group number 1 - Default model)

	PerACEs	StACEs	EMP	SC	TPF
EMP	-.041	.078	.000	.000	.000
SC	-.113	-.157	.231	.000	.000
TPF	-.134	-.040	.320	.369	.000
BO	.196	.069	-.172	-.329	-.888
REL	-.073	-.101	.148	.640	.000
ORG	-.102	-.142	.208	.900	.000
CS	-.110	-.033	.264	.304	.826
RES	-.073	-.022	.174	.201	.545

Direct Effects (Group number 1 - Default model)

	PerACEs	StACEs	EMP	SC	TPF
EMP	-.043	.008	.000	.000	.000
SC	-.122	-.021	.258	.000	.000
TPF	-.089	.000	.242	.340	.000
BO	.302	.009	.396	-.007	-3.038
REL	.000	.000	.000	.816	.000
ORG	.000	.000	.000	1.000	.000
CS	.000	.000	.000	.000	2.814
RES	.000	.000	.000	.000	1.000

Standardized Direct Effects (Group number 1 - Default model)

	PerACEs	StACEs	EMP	SC	TPF
EMP	-.041	.078	.000	.000	.000
SC	-.104	-.175	.231	.000	.000
TPF	-.082	.000	.234	.369	.000
BO	.081	.025	.112	-.002	-.888
REL	.000	.000	.000	.640	.000
ORG	.000	.000	.000	.900	.000
CS	.000	.000	.000	.000	.826
RES	.000	.000	.000	.000	.545

Indirect Effects (Group number 1 - Default model)

	PerACEs	StACEs	EMP	SC	TPF
EMP	.000	.000	.000	.000	.000
SC	-.011	.002	.000	.000	.000
TPF	-.056	-.004	.088	.000	.000
BO	.425	.016	-1.003	-1.033	.000
REL	-.109	-.015	.211	.000	.000
ORG	-.134	-.018	.258	.000	.000
CS	-.409	-.012	.927	.957	.000
RES	-.145	-.004	.329	.340	.000

Standardized Indirect Effects (Group number 1 - Default model)

	PerACEs	StACEs	EMP	SC	TPF
EMP	.000	.000	.000	.000	.000
SC	-.010	.018	.000	.000	.000
TPF	-.051	-.040	.085	.000	.000
BO	.114	.044	-.284	-.327	.000
REL	-.073	-.101	.148	.000	.000
ORG	-.102	-.142	.208	.000	.000
CS	-.110	-.033	.264	.304	.000
RES	-.073	-.022	.174	.201	.000

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	34	19.129	10	.039	1.913
Saturated model	44	.000	0		
Independence model	8	961.272	36	.000	26.702

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.980	.928	.990	.964	.990
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.278	.272	.275
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	9.129	.454	25.558
Saturated model	.000	.000	.000
Independence model	925.272	827.897	1030.048

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	.035	.017	.001	.047
Saturated model	.000	.000	.000	.000
Independence model	1.777	1.710	1.530	1.904

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.041	.009	.069	.667
Independence model	.218	.206	.230	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	87.129	88.279		
Saturated model	88.000	89.489		
Independence model	977.272	977.543		

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	.161	.145	.191	.163
Saturated model	.163	.163	.163	.165
Independence model	1.806	1.626	2.000	1.807

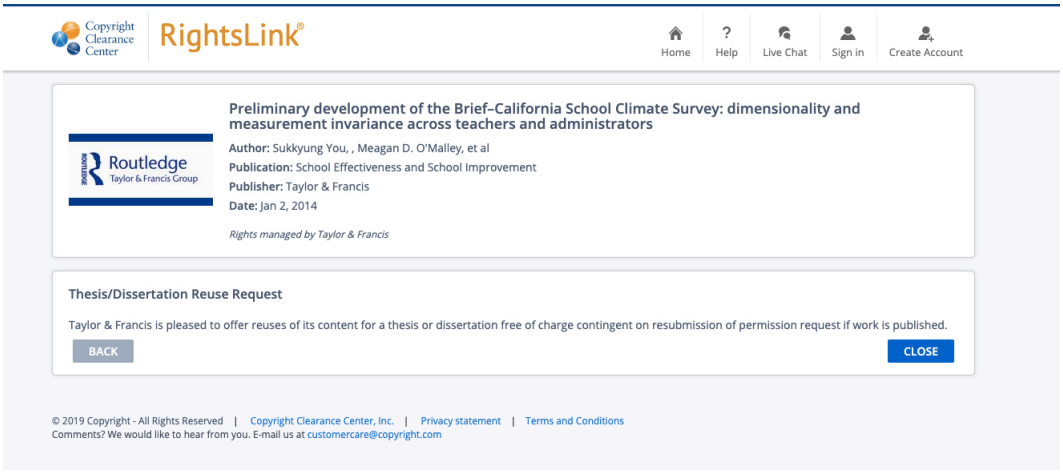
HOELTER

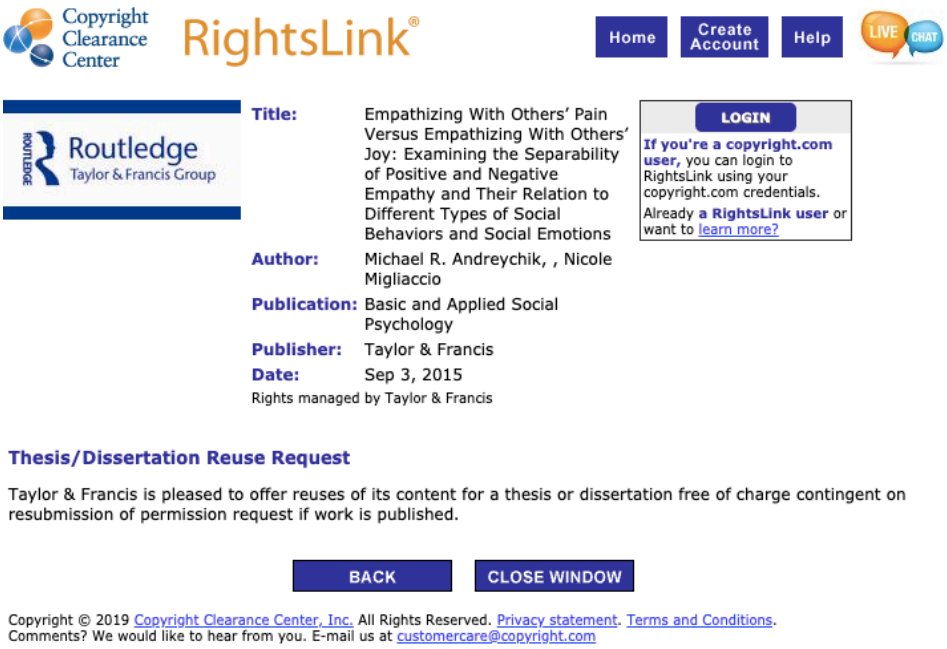
Model	HOELTER .05	HOELTER .01
Default model	518	657
Independence model	29	33

Execution time summary

Minimization:	.031
Miscellaneous:	.354
Bootstrap:	.000
Total:	.385

APPENDIX O. Scale Permissions





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Sherry Pineau Brown was born in Waterville, Maine on August 7, 1972 and graduated from Lawrence High School in Fairfield, Maine in 1990. She attended the University of Maine and graduated in 1994 with a Bachelor's degree in Secondary Education English. After graduation, she became a Volunteer in Service to America at an AIDS service organization in Clearwater, Florida. She began her teaching career in Littleton, Colorado at Chatfield Senior High School. While in Colorado, she earned a Master's degree in Liberal Studies with a concentration in Creative Writing from the University of Denver in 2008. She returned to Maine where she has taught at Thomas College, Kennebec Valley Community College, and Waterville Senior High School. She earned a Certificate of Advanced Study in Literacy Education in 2013 from the University of Maine. Sherry is a candidate for the Doctor of Philosophy degree in Education in Prevention and Intervention from the University of Maine in December 2020.